

# THE ECHINODERM NEWSLETTER

Number 22. 1997

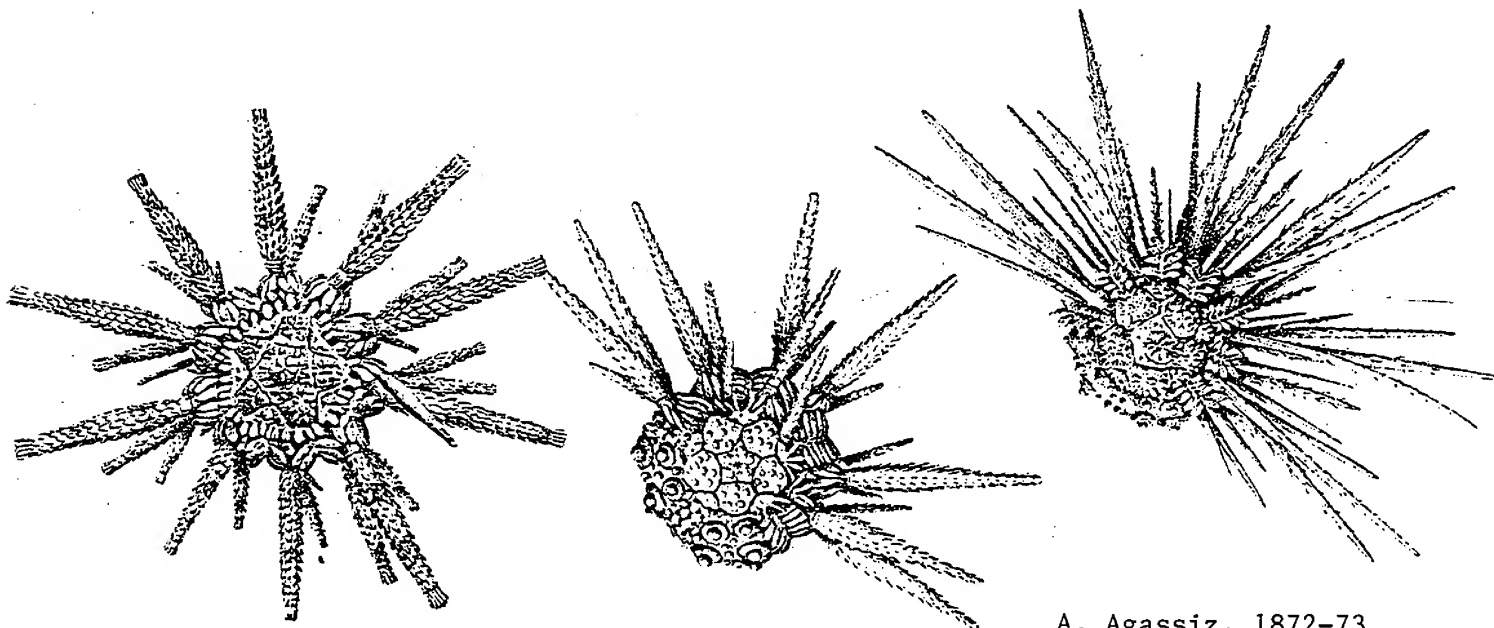
**Editor: Cynthia Ahearn**  
Smithsonian Institution  
National Museum of Natural History  
Room W-318, Mail Stop 163  
Washington D.C. 20560, U.S.A.

**NEW E-MAIL:** [ahearnc@nmnh.si.edu](mailto:ahearnc@nmnh.si.edu)

**Distributed by: David Pawson**  
Smithsonian Institution  
National Museum of Natural History  
Room W-321, Mail Stop 163  
Washington D.C. 20560, U.S.A.

The newsletter contains information concerning meetings and conferences, publications of interest to echinoderm biologists, titles of theses on echinoderms, and research interests, and addresses of echinoderm biologists. Individuals who desire to receive the newsletter should send their name, address and research interests to the editor.

The newsletter is not intended to be a part of the scientific literature and should not be cited, abstracted, or reprinted as a published document.



A. Agassiz, 1872-73

## TABLE OF CONTENTS

Echinoderm Specialists	
Addresses	
Phone (p-); Fax (f-); e-mail numbers.....	1
Current Research.....	34
Information Requests.....	55
Announcements, Suggestions.....	56
Items of Interest	
'Creeping Comatulid' by William Allison.....	57
Obituary - Franklin Boone Hartsock.....	58
Echinoderms in Literature.....	59
Theses and Dissertations.....	60
Recent Echinoderm Publications and Papers in Press.....	66
New Book Announcements	
Life and Death of Coral Reefs.....	84
Before the Backbone.....	84
Illustrated Encyclopedia of Fauna & Flora of Korea.....	84
Echinoderms: San Francisco. Proceedings of the Ninth IEC.....	85
Papers Presented at Meetings (by country or region)	
Africa.....	96
Asia.....	96
Australia.....	96
Canada.....	97
Caribbean.....	97
Europe.....	97
Guam.....	98
Israel.....	99
Japan.....	99
Mexico.....	99
Philippines.....	99
South America.....	99
United States.....	100
Papers Presented at Meetings (by conference)	
Fourth Temperate Reef Symposium.....	101
Annual Meeting of the Society for Integrative and Comparative Biology..	102
Ailsa's Section (con't)	
How I Began to Study Echinoderms - Part 7.	
Frank W.E.Rowe.....	103
Abigail Moore.....	104
Christine Materia-Rowland.....	105
Susan Hottenrott.....	105
Assessment of the Echinoderms Collection at the Bishop Museum.....	108
Echinoderms Specialists 'Keyword' List.....	110
Announcement - Fifth European Conference on Echinoderms.....	115
Bulletin - 'Beche-de-Mer'.....	119
Articles, Advertisements, Poetry.....	120

# ECHINODERM SPECIALISTS

(p- phone; f- fax; e-mail)

ABREU, MERCEDES  
INSTITUTE OF OCEANOLOGY  
AVE 19 No 18406  
E/ 184 y 186 REPARTO FLORES  
HAVANA, CUBA  
ocean@ceniai.cu

ACUNA, FABIAN H.  
UNIVERSIDAD NACIONAL DE MAR DEL PLATA  
DEPTO DE CIENCIAS MARINAS  
ENTRE RIOS 2606 6 A  
MAR DEL PLATA 7600, ARGENTINA  
p- 54 (023) 742426; f- 54 (023) 753150 facuna@mdp.edu.ar

ADAMS, NIKKI  
UNIVERSITY OF MAINE  
DEPARTMENT OF ZOOLOGY  
5751 MURRAY HALL, ROOM 100  
ORONO, ME 04469

AGATSUMA, YUKIO  
HOKKAIDO CENTRAL FISHERIES  
EXPERIMENTAL STATION  
HAMANAKA 238  
YOICHI HOKKAIDO, JAPAN

AHEARN, CYNTHIA  
SMITHSONIAN INSTITUTION  
NAT MUSEUM OF NATURAL HISTORY  
ROOM W318, MAIL STOP 163  
WASHINGTON, DC 20560  
p- 202-786-2125; f- 202-357-3043 ahearn@nmnh.si.edu

ALBI, YVONNE  
P.O. BOX 45828  
LOS ANGELES, CA 90045  
p- 310-823-3345

ALBUQUERQUE, MARIA  
UNIVERSIDAD SANTA URSULA  
DEPT DE CIENCIAS BIOLOGICAS  
RUA F. FERRARI, 75 BOTAFOL  
RIO DE JANEIRO, BRAZIL

ALI, MOHAMED SAID M.  
EL MINIA UNIVERISTY  
DEPARTMENT OF GEOLOGY  
FACULTY OF SCIENCE  
EL MINIA, EGYPT  
p- 86-32-30-11; f- 86-33-26-01

ALLEN, JOHN A.  
UNIVERSITY MARINE BIOLOGICAL STATION  
MILLPORT  
ISLE OF CUMBRAE, KA28 0EG SCOTLAND, U.K  
p- 01475-530581; f- 01475-530601 gbfe01@udef.ac.uk

ALLISON, WILLIAM R.  
MA. MAADHELI  
MAJEEDHEE MAGU  
MALE 20-03, REPUBLIC OF MALDIVES  
p- 960-32-6884; f- 960-32-4865 lintel@dhivehinet.net.mv

ALLISON, WILLIAM R.  
MA. MAADHELI  
MAJEEDHEE MAGU  
MALE 20-03, REPUBLIC OF MALDIVES  
p- 960-32-6884; f- 960-32-4865 lintel@dhivehinet.net.mv

ALVA, VICTOR  
INSTITUT DE CIENCIES DEL MAR  
C.S.I.C.  
PASSEIG JOAN DE BORBO s/n  
BARCELONA, 08039 SPAIN  
p- 34-3-221-73-40; f- 34-3-221-64-16 valva@masagran.uab.be

ALVAREZ, LEONARDO R.  
COLORADO #79  
NAPOLIS  
MEXICO D.F. 03810, MEXICO

ALVAREZ, MARTINEZ DE  
UNIVERSIDAD DE LA LAGUNA  
DEPARTAMENTO DE ZOOLOGIA  
TENERIFE, CANARY ISLANDS

AMEZIANE-COMINARDI, NADIA  
MUSEUM NATIONAL D'HISTOIRE NATURELLE  
BIOLOGIE INVERTEBRES MARINS  
55 RUE BUFFON  
PARIS, 75005 FRANCE  
p- 33-01-40-79-30-95; f- 33-01-40-79-30-89 cominard@mnhn.fr

ANDACHT, TRACY M.  
DUKE UNIVERSITY MARINE LABORATORY  
PIVERS ISLAND  
135 DUKE MARINE LAB ROAD  
BEAUFORT, NC 28516-9721  
p- 919-504-7569; f- 919-504-7648 tandacht@acpub.duke.edu

ANDERSEN, AASMUND  
NORWEGIAN COLLEGE OF FISHERY SCIENCE  
DEPT AQUATIC RES & ENVIRON BIOL  
ROOM B302, UNIV OF TROMSOE  
TROMSOE, N9037 NORWAY  
p- 47-776-46-049 aasmunda@stud.nfh.uit.no

ANDERSON, EDWIN J.  
TEMPLE UNIVERSITY  
GEOLOGY DEPARTMENT  
PHILADELPHIA, PA 19122

ANDERSON, JOHN M.  
110 ROAT ST.  
ITHACA, NY 14850

ANDERSON, ROLAND C.  
THE SEATTLE AQUARIUM  
PIER 59, WATERFRONT PARK  
1483 ALASKAN WAY  
SEATTLE, WA 98101-2059  
p- 206-386-4347; f- 206-386-4328

ANDRADE, HECTOR  
UNIVERSIDAD DE VALPARAISO  
INSTITUTO DE OCEANOLOGIA  
CASILLA 13-D  
VINA DEL MAR, CHILE

ARCHER, JEFFREY E.  
JANSEN'S PET & AQUATIC CENTRE  
CONSULTANT  
PO BOX 96 020  
BALMORAL, AUCKLAND, NEW ZEALAND  
p- +64 9 625 7915; f- +64 9 625 7999 j.archer@auckland.ac.nz

ARENDT, YURII A.  
PALEONTOLOGICAL INSTITUTE  
RUSSIAN ACADEMY OF SCIENCES  
PROFSOYUSNAYA STR. 123  
117647 MOSCOW, RUSSIA

ARISOLA, AMELIA T.  
SEAFDEC AQUACULTURE DEPT  
THE LIBRARY  
P.O. BOX 256  
TIGBAUAN, ILOILO, 5021 PHILIPPINES  
p-(63-33) 335-1009; f-(63-33) 335-1008 tms-seafdec@phil.gn.apc.org

ARNAUD, PATRICK M.  
CENTRE D'OCEANOLOGIE DE MARSEILLE  
STATION MARINE D'ENDOUME  
MARSEILLE, 13007 FRANCE  
p- 91 52.12.94

ARONSON, RICHARD B.  
DAUPHIN ISLAND SEA LAB  
MAR ENVIRON SCI CONSORTIUM  
P.O. BOX 369-370  
DAUPHIN ISLAND, AL 36528  
p- 334-861-7576; f- 334-861-7540 raronson@jaguar1.usouthal.edu

ARTECHE, INAKI  
DEPARTAMENTO DE BIOLOGIA (ZOOLOGY)  
FACULTAD DE CIENCIAS  
APARTADO 644  
BALBOA, SPAIN

AUSICH, WILLIAM I.  
THE OHIO STATE UNIVERSITY  
DEPARTMENT OF GEOLOGICAL SCIENCES  
155 SOUTH OVAL MALL  
COLUMBUS, OH 43210-1308  
p- 614-292-0069; f- 614-292-7688 ausich@mps.ohio-state.edu

AUSTIN, WILLIAM  
KHOYATAN MARINE LABORATORY  
4635 ALDER GLEN ROAD  
RR1, COWICHAN BAY  
BRITISH COLUMBIA, VOR 1NO CANADA

BAKER, ALAN  
NATIONAL MUSEUM OF NEW ZEALAND  
TE PAPA TONGAREWA  
PO BOX 467  
WELLINGTON, NEW ZEALAND  
p- 4 859-609; f- 4 857-157

BALKEMA, A. A.  
LISPLEIN 11, PO BOX 1675  
ROTTERDAM, NL 3000BR THE NETHERLANDS

BALL, BRENDAN JOHN  
UNIVERSITY COLLEGE GALWAY  
MARTIN RYAN MARINE SCIENCE INSTITUTE  
ZOOLOGY DEPARTMENT  
GALWAY, IRELAND

BALSER, ELIZABETH J.  
ILLINOIS WESLEYAN UNIVERSITY  
DEPT OF BIOLOGY  
P.O. BOX 2900  
BLOOMINGTON, IL 61702  
balser@fhl.washingto

BARKER, MICHAEL F.  
PORTOBELLO MARINE LABORATORY  
PO BOX 8  
PORTOBELLO  
DUNEDIN, NEW ZEALAND  
p- 64-3-479-7988; f- 64-3-478-1825 mfbarker@rivendell.otago.ac.nz

BARTSCH, ILSE  
BIOLOGISCHE ANSTALT HELGOLAND  
NOTKESTR. 31  
HAMBURG, 22607 GERMANY  
p- (040) 89 69 32 12; f- 49 40 89 69 31 15

BASCH, LARRY V.  
SCRIPPS INSTITUTION OF OCEANOGRAPHY  
UNIVERSITY OF CALIFORNIA, SAN DIEGO  
LA JOLLA, CA 92093-0201  
p- 619-534-9899; f- 619-534-6500 lbasch@ucsd.edu

BASKAR, B. K.  
CENTRAL MARINE FISHERIES R.I.  
E.R.G. ROAD  
ERNACULAM  
COCHIN, 682031 INDIA

BAUER, JOHN C.  
7794 CLOVERFIELD CIRCLE  
BOCA RATON, FL 33433  
p- 407-395-9426

BAUMILLER, TOMASZ K.  
UNIVERSITY OF MICHIGAN  
MUSEUM OF PALEONTOLOGY  
1109 GEDDES ROAD  
ANN ARBOR, MI 48109-1079  
p- 313-764-7543; f- 313-936-1380 tomaszb@umich.edu

BAY-SCHMITH, ENRIQUE  
INSTITUTO DE BIOLOGIA CELULAR  
UNIVERSIDAD DE CONCEPCION  
CONCEPCION, CHILE

BAZHIN, ALEXANDER  
KAMCHATKA PACIFIC INST FISHERY  
& OCEANOGR. (KAMCHATNIRO)  
NABEREZHNYAYA, 18  
PETROPAVLOVSK-KAMCHATSKY, 68302 RUSSIA  
p- 415-222-35-00; f- 415-222-24-05

BEAVER, HAROLD H.  
BAYLOR UNIVERSITY  
DEPARTMENT OF GEOLOGY  
P.O. BOX 97354  
WACO, TX 76798-7354  
p- 817-755-2361; f- 817-755-2673 harold-beaver@baylor.edu

BECKER, JOHANN  
MUSEU NACIONAL  
QUINTA DA BOA VISTA  
RIO DE JANEIRO, RJ, 20940-040 BRAZIL

BEDDINGFIELD, STEVE D.  
1813 OLD ORCHARD ROAD  
VESTAVIA, AL 35216  
p- 205-823-7617; f- 205-975-6097 zu02081@uab.dpo.edu

BEGBIE, KIRSTEN M.  
GATTY MARINE LAB  
EAST SANDS  
ST ANDREWS, SCOTLAND, U.K.  
p- 0334-76161 ; f- 0334-63443 kmb2@st-andrews.ac.uk

BELL, BRUCE M.  
EDRIO OIL COMPANY  
SUITE 333W  
2601 NW EXPRESSWAY  
OKLAHOMA CITY, OK 73112  
p- 405-843-8408; f- 405-843-8509

BELYAEV, GEORGE M.  
P.P. SHIRSHOV INSTITUTE OF OCEANOLOGY  
KRASIKOVA STR. 23  
MOSCOW, 117218 RUSSIA

BENEJAM DE SUAREZ, CARLA  
24 TALBOT ST.  
SALINAS, CA 93901  
p- 408-753-2099

BENTLEY, ANDREW C.  
UNIVERSITY OF PORT ELIZABETH  
DEPARTMENT OF ZOOLOGY  
P.O. BOX 1600  
PORT ELIZABETH, 6000, SOUTH AFRICA  
p- 27-41-504-2346; f- 27-41-504-2317 zlbac@zoo.upe.ac.za

BERENTS, PENELOPE B.  
AUSTRALIAN MUSEUM  
INVERTEBRATE ZOO, COLLECTION MANAGER  
6 COLLEGE STREET  
SYDNEY 2000, NSW, AUSTRALIA  
p61-2-9320-6134; f- 61-2-9320-6050 pennyb@amsg.austmus.gov.au

BERGEN, MARY  
SOUTHERN CALIFORNIA COASTAL  
WATER RESEARCH PROJECT  
7171 FENWICK LANE  
WESTMINSTER, CA 92683-5218  
p- 714-894-2222; f- 714-894-9699 maryb@sccwrp.org

BERTRAM, DOUGLAS F.  
ENVIRONMENT CANADA  
PACIFIC WILDLIFE RES CTR  
RR1 5421 ROBERTSON RD  
DELTA, B.C., V4K 3N2 CANADA  
p- (604) 946-8546

BIBLIOTECA,  
MUSEU NACIONAL, UNIVERSIDADE  
FEDERAL DO RIO DE JANEIRO  
QUINTA DA BOA VISTA  
RIO DE JANEIRO, RJ, BRAZIL

BIBLIOTHEEK,  
NATIONAAL NATUURHISTORISCH MUSEUM  
POSTBUS 9517  
2300 RA LEIDEN, NETHERLANDS

BIBLIOTHEK,  
BUNDESANSTALT FUR GEOWISS.  
UND ROHSTOFFE  
POSTFACH 51 01 53  
HANNOVER 51, D-3000 GERMANY

BIBLIOTHEQUE,  
MUSEE OCEANOGRAPHIQUE  
AVENUE SAINT-MARTIN  
MC 98000 MONACO  
p- +377-93-15-36-07; f- +377-93-50-52-97

BIERMANN, CHRISTIANE  
STATE UNIVERSITY OF NEW YORK  
DEPT ECOLOGY & EVOLUTION  
STONY BROOK, NY 11794-5245  
p- 516-632-8586; f- 516-632-7626 biermann@life.bio.sunysb.edu

BILLETT, DAVID  
SOUTHAMPTON OCEANOGRAPHY CENTRE  
EMPRESS DOCK  
SOUTHAMPTON, SO14 3ZH ENGLAND, U.K.  
p- 44-1703-596102; f- 44-1703-596101 d.billett@soc.soton.ac.uk

BIRENHEIDE, RUDIGER  
TOKYO INSTITUTE OF TECHNOLOGY  
BIOL LAB, FAC. OF SCIENCE  
2-12-1 O-OKAYAMA, MEGURO-KU  
TOKYO 152, JAPAN  
p- 81-35-734-2656; f- 81-35-734-2946 rbirenhe@bio.titech.ac.jp

BIRKELAND, CHARLES E.  
UNIVERSITY OF GUAM  
MARINE LABORATORY  
UOG STATION  
MANGILAO, GU 96923  
p- 671-735-2184; f- 671-734-6767 birkelan@uog9.uog.edu

BIRYUKOVA, INGA V.  
TINRO - PACIFIC RESEARCH FISHERY CENTER  
4 SHEVCHENKO ALLEY  
VLADIVOSTOK, 690600 RUSSIA  
p- (4232) 25-95-04; f- (4232) 25-77-83 root@tinro.marine.su

BLACK, W. ROBERT  
THE UNIVERSITY OF WESTERN AUSTRALIA  
DEPARTMENT OF ZOOLOGY  
NEDLANDS, W.A., 6907 AUSTRALIA  
p- 61 9 380-2232; f- 61 9 380-1029 rblack@uniwa.uwa.edu.au

BLAKE, DANIEL B.  
UNIVERSITY OF ILLINOIS  
DEPT GEOLOGY, 245 NHB  
1301 W GREEN ST.  
URBANA, IL 61801  
p- 217-333-3833; f- 217-244-4996 blake@hercules.geology.uiuc.edu

BLUHM, BODIL A.  
INSTITUTE OF POLAR ECOLOGY  
WISCHHOFSTR. 1-3  
GEB. 12  
KIEL, D-24148 GERMANY  
p- 49-431-7208770; f- 49-431-7208720 npf22@rz.uni-kiel.d400.de



BLUHM, HARTMUT  
ALFRED-WEGENER INST POLAR & MARINE RESEARCH  
COLUMBUSSTRASSE  
27568 BREMERHAVEN, GERMANY  
p-+49-471-4831-581; f-+49-471-4831-580  
hbbluhm@awi-bremerhaven.de

BOCKELIE, JOHAN F.  
NORSK HYDRO EXPLORATION  
P.O. BOX 200  
N-1321 STABEKK, NORWAY  
p- 47-22-738100; f- 47-22-739070

BOCZAROWSKI, ANDRZEJ  
SILESIA UNIVERSITY  
DEPARTMENT OF EARTH SCIENCES  
BEDZINSKA STR. 60  
SOSNOWIEC 41-200, POLAND

BODENFORSCHUNG, BUNDESANSTALT F  
BIBLIOTHEK-L  
3 HANNOVER-BUCHOLZ, POSTFACH 54  
STILLEWEG 2, GERMANY

BOETTGER, ANNE  
UNIV OF ALABAMA AT BIRMINGHAM  
DEPT BIOLOGY, CAMPBELL HALL  
1300 UNIVERSITY BOULEVARD  
BIRMINGHAM, AL 35294-1170  
g08sab@norm.dpo.uab.edu

BOOTH JR., BILLY B.  
MOTE MARINE LABORATORY  
1600 CITY ISLAND PARK  
SARASOTA, FL 33577

BORZONE, CARLOS A.  
UNIVERSIDADE FEDERAL DO PARANA  
CENTRO DE ESTUDOS DO MAR  
AV BEIRA MAR, s/n, PONTAL DO SUL  
PARANAGUA, PARANA, 83255-000 BRAZIL  
p-0055(041)455-1333; f-0055(041)455-1105  
capborza@aica.cem.ufpr.br

BOSCH, ISIDRO M.  
STATE UNIVERSITY OF NEW YORK  
DEPARTMENT OF BIOLOGY  
1 COLLEGE CIRCLE  
GENESE0, NY 14454  
p- 716-245-5303; f- 716-245-5007 bosch@uno.cc.geneseo.edu

BOTTJER, DAVID  
UNIVERSITY OF SOUTHERN CALIFORNIA  
DEPT. OF GEOLOGICAL SCIENCES  
LOS ANGELES, CA 90089

BOUDOURESQUE, CHARLES F.  
CENTRE D'OCEANOLOGIE DE MARSEILLE  
FACULTE DES SCIENCES DE LUMINY  
70, ROUTE LEON LACHAMP  
MARSEILLE CEDEX 9, 13288 FRANCE  
p-(33)4 91 26 91 30; f-(33) 4 91 41 12 65 boudour@com.univ-mrs.fr

BOULAND, CATHERINE  
UNIVERSITE LAVAL  
DEPARTEMENT DE BIOLOGIE  
QUEBEC, QUEBEC, G1K 7P4 CANADA

BOURGOIN, ALLAIN  
UNIVERSITE DE MONCTON  
CAMPUS SHIPPIGAN, P.O. BOX 2000  
SHIPPIGAN, N.B., EOB 2PO CANADA  
p- 506-336-3425; f- 506-336-3434 allain@cus.ca

BRANDT, DANITA  
MICHIGAN STATE UNIVERSITY  
DEPT OF GEOLOGICAL SCIENCES  
EAST LANSING, MI 48824-1115  
p- 517-355-4626; f- 517-353-8787 brandt@pilot.msu.edu

BRAY, RICHARD D.  
176 WEST MAIN ST.  
PORT JERVIS, NY 12771

BREGMAN, YURY E.  
TINRO - PACIFIC RESEARCH IFISHERY CENTER  
4 SHEVCHENKO ALLEY  
VLADIVOSTOK, 690600 RUSSIA  
p- 4232-255-943; f- 4232-257-783 root@tinro.marine.su

BRETON, GERARD  
MUSEUM D'HISTOIRE NATURELLE  
PLACE DU VIEUX MARCHE  
LE HAVRE, 76600 FRANCE  
p- 33-02-35-41-37-28; f- 33-02-35-42-12-40

BRETT, CARLETON  
UNIVERSITY OF ROCHESTER  
DEPT. OF GEOLOGICAL SCIENCES  
ROCHESTER, NY 14627

BREWIN, PAUL E.  
UNIVERSITY OF OTAGO  
DEPT. MARINE SCIENCE, P.O. BOX 56  
DUNEDIN, NEW ZEALAND  
p- 3-479-8306 marinesci@otago.ac.nz

BREY, THOMAS  
ALFRED WEGENER INSTITUTE FOR  
POLAR AND MARINE RESEARCH  
P.O. BOX 120161  
BREMERHAVEN, D-27515 GERMANY  
p-+49(0)471-4831-316; f-+49(0)471-4831-149  
tbrey@awi-bremerhaven.de

BRITO, IGNACIO M.  
INSTITUTO AMBIENTAL DO PARANA  
RUA DESEMBARGADOR MOTTA, 3384  
CURITIBA, PR, 80420-200 BRAZIL

BROADHEAD, THOMAS  
UNIVERSITY OF TENNESSEE  
DEPT. OF GEOLOGICAL SCIENCE  
KNOXVILLE, TN 37996

BROWER, JAMES C.  
SYRACUSE UNIVERSITY  
DEPARTMENT OF EARTH SCIENCES  
HEROY GEOLOGY LABORATORY  
SYRACUSE, NY 13244-1070  
p- 315-443-4119; home 315 492-6657

BRUMBAUGH, JOE  
SONOMA STATE UNIVERSITY  
DEPT. OF BIOLOGY  
ROHNERT PARK, CA 94928

BRUNEL, PIERRE  
UNIVERSITE DE MONTREAL  
DEPT SCIENCES BIOLOGIQUES  
CP 6128, SUCCURSALE CENTRE-VILLE  
MONTREAL, QC, H3C 3J7 CANADA  
p- 514-343-7461; f- 514-343-2293

BUTTRON-SANCHEZ, BLANCA E.  
INSTITUTO DE GEOLOGIA, UNAM  
CIUDAD UNIVERSITARIA  
DELEG. COYOACAN  
04510 MEXICO, D.F., MEXICO  
p- 525 622 42 97; f- 525 550 66 44 laguarda unamvml.dgsca.unam.mx

BURCH, BEATRICE L.  
BERNICE P. BISHOP MUSEUM  
DEPT NAT. SCIENCES (INVERT ZOOL)  
1525 BERNICE ST.  
HONOLULU, HI 96817-0916  
p- 808-847-3511; f- 808-841-8968 tab@hits.net

BURKE, ROBERT  
UNIVERSITY OF VICTORIA  
DEPARTMENT OF BIOLOGY  
VICTORIA, B.C., V8W 2F2 CANADA  
p- 604-721-710; f- 604-721-8653

BURTON, MARGARET  
MEMORIAL UNIVERSITY OF NEWFLD  
DEPARTMENT OF BIOLOGY  
ST JOHN'S, NF, A1B 3X9 CANADA

BUSSARAWIT, SOMCHAI  
PHUKET MARINE BIOLOGICAL CENTR  
PO BOX 60  
PHUKET, 83000 THAILAND  
p- 66-76-391128; f- 66-76-391127

BUSTER, PETER P.T.M  
GREVENBICHTSTRAAT 66  
5043 MD TILBURG, THE NETHERLANDS  
thebus@pi.net

BUSTOS, EDUARDO  
INSTITUTO DE FOMENTO PESQUERO  
AVE. DIEGO PORTALES 1450  
PUERTO MONTT, CHILE  
f- 56 65-259-995 ebustos@fop.cl

BYERS, SHEILA  
ROYAL ONTARIO MUSEUM  
DEPT. OF INVERT. ZOOL.  
100 QUEEN'S PARK  
TORONTO, ONTARIO, M5S 2C6 CANADA

BYRNE, MARIA  
UNIVERSITY OF SYDNEY  
DEPT EMBRYOLOGY & HISTOLOGY, F13  
SYDNEY, NSW 2006, AUSTRALIA  
p- 61-2-351-5166; f- 61-2-351-2813 mbyrne@anatomy.su.oz.au

CAFFI, MARGARITA G.  
UNIVERSIDADE DE CONCEPCION  
DEPTO DE ZOOLOGIA  
CASILLA 1367  
CONCEPCION, CHILE

CALDWELL, JOHN W.  
UNIVERSITY OF FLORIDA  
DEPT ENVIRON ENGINEERING SCI  
111 BLACK HALL  
GAINESVILLE, FL 32611

CALTAGIRONE, ANGELA  
LBMEB  
FACULTE DES SCIENCES DE LUMINY  
MARSEILLE, CEDEX 9, 13288 FRANCE  
p- 91-269165; f- 91-411265 calta@com.univ-mrs.fr

CAMARGO, TANIA MARIA  
UNIVERSIDADE DE SAO PAULO  
INSTITUTO OCEANOGRAFICO  
SAO PAULO, BRAZIL

CAMERON, R. ANDREW  
CALIFORNIA INSTITUTE OF TECH  
DIVISION OF BIOLOGY 156-29  
PASADENA, CA 91125  
p- 818-395-8421; f- 818-793-3047 acameron@mirsky.caltech.edu

CAMPBELL, ALAN  
PACIFIC BIOLOGICAL STATION  
DEPT OF FISHERIES & OCEANS  
NANAIMO, B.C., V9R 5K6 CANADA  
p- 604-756-7124; f- 604-756-7138 campbella@pbs.dfo.ca

CAMPBELL, ANDREW C.  
QUEEN MARY & WESTFIELD COLLEGE  
SCHOOL OF BIOLOGICAL SCIENCES  
UNIVERSITY LONDON, MILE END RD  
LONDON, E1 4NS ENGLAND, U.K.  
p- 44-1-71-775-3298; f- 44-1-81-983-0973 a.c.campbell@qmw.ac.uk

CAMPBELL, DAVID B.  
RIDER COLLEGE  
BIOLOGY DEPARTMENT  
2083 LAWRENCEVILLE ROAD  
LAWRENCEVILLE, NJ 08648-3099  
p- 609-895-5418; f- 609-895-5782 campbell@rider.edu

CANDIA-CARNEVALI, M. DANIELA  
UNIV. DEGLI STUDI DI MILANO  
DIPARTIMENTO DI BIOLOGIA  
VIA CELORIA 26  
MILANO, 20133 ITALY  
p-39-02-2277-4475; f- 39-02-2277-4472 cndmdn@imiucca.csi.unimi.it

CANNON, LESTER R.  
QUEENSLAND MUSEUM  
P.O. BOX 3300  
SOUTH BRISBANE, QLD, 4101 AUSTRALIA  
p- 617-840-7724; f- 617-846-1918 l.cannon@mailbox.uq.oz.au

CARCAMO, ALFONSO G.  
UNIVERSIDAD DE CHILE-OSORNO  
CASILLA 933  
OSORNO, CHILE

CARDER, NANCY  
6503 LA PALOMA CT.  
CARLSBAD, CA 92009

CAREY JR, ANDREW G.  
OREGON STATE UNIVERSITY  
SCHOOL OF OCEANOGRAPHY  
CORVALLIS, OR 97331  
p- 503-754-3504; acarey@oce.orst.edu

CARNEY, ROBERT  
LOUISIANA STATE UNIVERSITY  
COASTAL RESOURCES LABORATORY  
BATON ROUGE, LA 70803

CARPENTER, ROBERT C.  
CALIFORNIA STATE UNIVERSITY  
DEPT. OF BIOLOGY  
NORTHRIDGE, CA 91330

CARSON, SALLY  
PORTOBELLO MARINE LABORATORY  
P.O. BOX 8  
PORTOBELLO, DUNEDIN, NEW ZEALAND

CASTILLO, JUAN CARLOS  
ECOLOGIA MARINA  
FAC. C BIOLOGICAS, UNIVERSIDAD  
CATOLICA, CASILLA 114-D  
SANTIAGO, CHILE  
p- 56-2-222-4561; f- 56-2-222-5515

CASTRO, LILY ROMINA  
C/O CICESE  
P.O. BOX 434843  
SAN DIEGO, CA 92143

CASTRO MANSO, CYNTHIA LARA DE  
DEPARTAMENTO DE ZOOLOGIA  
UNIVERSIDAD PARANA, CX-P 19-020  
81.504 CENTRO POLITECNICO  
CURITIBA-PARANA, BRAZIL

CENTRO DE INVESTIGACIONES BIOLOGIA MARINA  
CC NO. 157  
1650 SAN MARTIN  
BUENOS AIRES, ARGENTINA

CHAET, A.B.  
UNIVERSITY OF WEST FLORIDA  
DEPT. OF CELL AND MOLEC. BIOL.  
PENSACOLA, FL 32514

CHAO, CHI-MING  
ACADEMIA SINICA  
R634, INSTITUTE OF ZOOLOGY  
NANKANG, TAIPEI 115, TAIWAN  
p- 88-62-789-9548; f- 88-62-785-8059 bbcatt@gate.sinica.edu.tw

CHAO, SHYH-MIN  
NATL MUSEUM NATURAL SCIENCE  
DIV COLLECTION & RESEARCH  
1, KUAN CHIEN RD  
TAICHUNG 404, TAIWAN  
f- 086-4-3222290 chaosm@nmns1.nmns.edu.tw

CHEN, CHANG-PO  
INSTITUTE OF ZOOLOGY  
ACADEMIA SINICA  
NANKANG, TAIPEI 115, TAIWAN  
p- 88-62-789-9548; f- 88-62-785-8059 zocp@ccvax.sinica.edu.tw

CHIA, FU-SHIANG  
HONG KONG UNIV SCI & TECHNOL  
DEPARTMENT OF BIOLOGY  
CLEAR WATER BAY  
KOWLOON, HONG KONG  
p- 852-2358-7348; f- 852-2358-1559 bofschia@usthk.ust.hk

CHIU, SEIN TUCK  
HONG KONG BAPTIST COLLEGE  
DEPARTMENT OF BIOLOGY  
224 WATERLOO ROAD  
KOWLOON, HONG KONG

CINCINNATI, UNIVERSITY OF  
GEOLOGY DEPARTMENT  
OLD TECH BUILDING  
CINCINNATI, OH 45221

CINTRA BUENROSTRO, CARLOS E.  
UNIV AUTONOMA DE BAJA CALIFORNIA SUR  
CARR. AL SUR KM. 5.5, A.P. 19-B  
LA PAZ, B.C.S., 23080 MEXICO  
p- (112) 111-40; f- (112) 124-77 ccintra@calafia.uabcs.mx

CLARK, AILSA McGOWN  
GYLLYNGDUNE, SOUTH ROAD  
WIVELSFIELD GREEN  
HAYWARDS HEATH  
SUSSEX, RH17 7QS ENGLAND, U.K.

CLARK, ROGER  
115 PINE STREET  
KLAMATH FALLS, OR 97601  
p- 541-883-7582 insignis@cdsnet.net

CLEMENTS, LEE ANN J.  
JACKSONVILLE UNIVERSITY  
CHAIR, DEPT BIOL & MARINE SCI  
2800 UNIVERSITY BLVD N  
JACKSONVILLE, FL 32211  
p- 904-744-3950 ext 7322; f- 904-745-7573 lclemen@junix.ju.edu

CLOUSE, RON  
310 WEST 99TH ST, APT 808  
NEW YORK, NY 10025  
d043900c@dc.seflin.org

COBB, JAMES L.S.  
GATTY MARINE LAB  
ST. ANDREWS  
FIFE, SCOTLAND, U.K.  
f- 334 76161

COLON-JONES, D. ELIZABETH  
RSMAS, UNIVERSITY OF MIAMI  
DIV. MARINE BIOLOGY FISHERIES  
4600 RICKENBACKER CAUSEWAY  
MIAMI, FL 33149-1098  
p- 305-361-4642; f- 305-361-4600 ljones@rsmas.miami.edu

CONAND, CHANTAL  
UNIVERSITE DE LA REUNION  
LAB. ECOLOGIE MARINE  
15 AVENUE RENE CASSIN  
SAINT DENIS, CEDEX 9, 97715 FRANCE  
p- 262-93-81-78; f- 262-93-81-66 conand@univ-reunion.fr



CONLU, PRUDENCIA  
UNIVERSITY OF PHILIPPINES IN  
THE VISAYAS, COLLEGE OF FISHERIES  
MIAGAO, ILOILO, THE PHILIPPINES

CONSTABLE, ANDREW J.  
ASNRM  
DEAKIN UNIVERSITY  
P.O. BOX 423, WARRNAMBOOL  
VICTORIA 3280, AUSTRALIA  
p- 61-55-633099; f- 61-55-633462 aconst@deakin.edu.au

COPPARD, SIMON  
QUEEN MARY & WESTFIELD COLLEGE  
SCHOOL OF BIOLOGICAL SCIENCES  
UNIVERSITY LONDON, MILE END RD  
LONDON, E1 4NS ENGLAND, U.K.  
p- 44-1-71-775-3298; f- 44-1-81-983-0973

COSTA, HENRIQUE R.  
DPTO BIOLOGIA MARINA  
UFRJ  
B1 A CCS-I FUND AO  
RIO DE JANEIRO, RJ, 21910 BRAZIL

COSTELLOE, JOHN  
UNIVERSITY COLLEGE  
ZOOLOGY DEPARTMENT  
GALWAY, IRELAND

COULON, P.  
UNIVERSITE LIBRE DE BRUXELLES  
LABORATOIRE BIOL. MARINE CP 160  
AVE F.D. ROOSEVELT 50  
BRUXELLES, B-1050 BELGIUM

COX, ROBERT  
UNIVERSITY OF MICHIGAN  
DEPT OF GEOLOGICAL SCIENCE  
ANN ARBOR, MI 48109

CREASER, EDWIN P.  
DEPT MARINE RESOURCES  
MARINE SCIENCES LABORATORY  
W. BOOTHBAY HARBOR, ME 04575  
p- 207-633-9518; f- 207-633-9579

CREASER, EMMA  
UNITY COLLEGE  
HC78, BOX 1  
UNITY, MAINE 04988-9502

CRUMP, ROBIN G.  
ORIELTON FIELD CENTRE  
PEMBROKE, DYFED, SA71 5EZ WALES, U.K.  
p- 1-64-666-1225; f- 1-64-666-1737

CUENCA, CATHERINE  
MUSEUM HISTOIRE DE NANTES  
12 RUE VOLTAIRE  
NANTES, 44000 FRANCE

CUTRESS, BERTHA M.  
440 N.W. ELKS DRIVE, APT 106  
CORVALLIS, OR 97330-3747  
p- 541-758-1726

DAFNI, JACOB  
EILAT COLLEGE  
ACADEMIC DIRECTOR  
PO BOX 1301  
EILAT 88112, ISRAEL  
p- 972-(0)7-6304537; f- 972-(0)7-6304556 jdafni@netvision.net.il

DAVID, BRUNO  
UNIVERSITE DE BOURGOGNE  
CENTRE DE SCIENCES DE LA TERRE  
6 BD. GABRIEL  
DIJON, 21000 FRANCE  
p- 33-3-80-39-63-71; f- 33-3-80-39-63-87 bdavid@u-bourgogne.fr

DAVID, JEROME  
UNIVERSITE DE REIMS  
FACULTE DES SCIENCES  
LAB SCI DE LA TERRE, BP347  
REIMS, CEDEX, 51062 FRANCE  
p- 33-26-05-33-68; f- 33-26-05-32-79

DAVOULT, DOMINIQUE  
STATION MARINE  
ERS 395 DU CNRS  
28 AVENUE FOCH, BP 80  
WIMEREUX, 62930 FRANCE  
p- 33-3-21-99-29-29; f- 33-3-21-99-29-01 dom@loalit.univ-littoral.fr

DAY, ROB W.  
UNIVERSITY MELBOURNE  
DEPT. OF ZOOLOGY  
GATE 12, ROYAL PARADE  
PARKVILLE, VICTORIA 3052, AUSTRALIA

DAYTON, PAUL K.  
SCRIPPS INSTITUTION OCEANOGR.  
MAIL CODE 0201  
9500 GILMAN DRIVE  
LA JOLLA, CA 92093  
p- 619-534-6740; f- 619-534-6500 pdayton@ucsd.edu

DE CELIS, ALEJANDRO K.  
NATIONAL MUSEUM  
EXECUTIVE BUILDING  
RIZAL PARK, ERMITA  
MANILA, THE PHILIPPINES

DE JESUS, DORA  
LABORATORIO MARITIMO DA GUIA  
FACULDADE CIENCIAS DE LISBOA  
ESTRADA DO GUINCHO  
CASCAIS P-2750, PORTUGAL

DE RIDDER, CHANTAL  
UNIVERSITE LIBRE DE BRUXELLES  
LABORATOIRE BIOL. MARINE CP 160  
AVE F.D. ROOSEVELT 50  
BRUXELLES, B-1050 BELGIUM  
p- 32-2-6502970; f- 32-2-6502796 cridder@ulb.ac.be

DE WIT, WALTER M.J.  
DIEPESTEEG 25  
6994 CC DE STEEG, THE NETHERLANDS  
p- 08309-54344; f- 08309-51718

DEAN, JULIETTE  
DEPT OF EARTH SCIENCES  
DOWNING STREET  
CAMBRIDGE, CB3 9DF ENGLAND, U.K.  
jd10006@esc.cam.ac.uk

DEARBORN, JOHN H.  
UNIVERSITY OF MAINE  
DEPARTMENT OF ZOOLOGY  
5751 MURRAY HALL  
ORONO, ME 04469-5752  
p- 207-581-2552 dearborn@maine.maine.edu

DEBENHAM, PATTY  
318 E. VICTORIA ST., APT. C  
SANTA BARBARA, CA 93101

DeGREEF, YVES  
UNIVERSITE LIBRE DE BRUXELLES  
LABORATOIRE BIOL. MARINE CP 160  
AVE F.D. ROOSEVELT 50  
BRUXELLES, B-1050 BELGIUM

DEL VALLE, ROSA  
INSTITUTO DE OCEANOLOGIA  
AVE Ira No. 18406  
RPTO. FLORES, PLAYA  
HAVANA, CUBA  
oceano@ceniai.cu

DELAVAUT, ROBERT  
UNIVERSITE D'ORLEANS  
LAB BIOL CELLULAIRE & ANIMALE  
45045 ORLEANS CEDEX  
ORLEANS CEDEX, 45045 FRANCE

DELMAS, P.  
UNIVERSITE D'AIX-MARSEILLE II  
LAB. DE ZOOL. MARINE, CERAM  
AVE ESC., NORM-NIEMEN  
MARSEILLE CEDEX 13, F-13397 FRANCE

DEMARGNE, MICHAEL  
RUE DE L'ANCIENNE MAIRIE 38730  
VIRIEU SUR BOURBRE, FRANCE

DEPARTMENT, AQUACULTURE  
SOUTHEAST ASIAN FISHERIES CTR.  
P.O. BOX 256  
ILOILO CITY, THE PHILIPPINES

DEUTZMANN, HELMUT  
REINALDSTR. 3  
RATINGEN, 40882 GERMANY

DEVIN, MICHAEL G.  
NATIONAL SCIENCE FOUNDATION  
SUITE 1070  
4201 WILSON BLVD  
ARLINGTON, VA 22230  
p- 703-306-1993; f- 703-306-0091 mdevin@nsf.gov

DIACANTONI, ANA MARCOPOULOU -  
UNIVERSITY OF ATHENS  
SUBFAC. SCIENCE OF EARTH  
93 MARATHONODROMOU STR.  
MAROUSSI, ATHENS, 15125 GREECE

DIEHL, WALTER J.  
MISSISSIPPI STATE UNIVERSITY  
DEPT. OF BIOLOGICAL SCIENCE  
P.O. DRAWER GY  
MISSISSIPPI STATE, MS 39762-5759  
p- 601-325-7576; f- 601-325-7939 wjdiehl@ra.msstate.edu

DOBSON, WILLIAM E.  
APPALACHIAN STATE UNIVERSITY  
DEPT. OF BIOLOGY  
BOONE, NC 28608  
p- 704-262-6910; f- 704-262-2127 dobsonwe@appstate.edu

DOI, TERUO  
KYUSHU UNIVERSITY 33  
DEPT BIOLOGY, FAC SCIENCE  
HIGASHI-KU, FUKUOKA 812, JAPAN  
p-81-92-641-1101, ext4419; f-81-92-632-2741;  
tedoiscb@mbox.n.c.kyushu-u.ac.jp

DOLMATOV, IGOR Y.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
p- (4232) 31-11-78; f- (4232) 31-09-00 aisa@vld.global-one.ru

DOMINGUEZ ALONSO, PATRICIO  
UNIVERSIDAD COMPLUTENSE DE MADRID  
DEPTO DE PALEONTOLOGIA  
FAC DE CIENCIAS GEOLOGICAS  
MADRID, 28040 SPAIN  
p- 34-1-3944856; f- 34-1-3944849 padomin@eucmax.sim.ucm.es

DONOVAN, STEPHEN K.  
UNIVERSITY OF THE WEST INDIES  
DEPT GEOGRAPHY & GEOLOGY, MONA CAMPUS  
KINGSTON 7, JAMAICA, W.I.  
p- 809-927-2728; f- 809-977-6029

DOTAN, AARON  
TEL AVIV UNIVERSITY  
DEPARTMENT OF ZOOLOGY  
RAMAT-AVIV, 69978 ISRAEL

DOWNEY, MAUREEN E.  
443 SUTHERLAND ROAD  
FRIDAY HARBOR, WA 98250

DROZDOV, ANATOLY L.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
f- 4232-310-900 faribm@visenet.marine.su

DRUMMOND, ANNE E.  
UNIVERSITY OF NATAL  
DEPT ZOOLOGY & ENTOMOLOGY  
P BAG X01  
SCOTTSVILLE, 3209 SOUTH AFRICA  
p- (0331) 260-5104; f- (0331) 260-5105  
drummond@zoology.unp.ac.za

DUBOIS, PHILIPPE  
UNIVERSITE LIBRE DE BRUXELLES  
LABORATOIRE BIOL. MARINE CP 160  
AVE F.D. ROOSEVELT 50  
BRUXELLES, B-1050 BELGIUM  
p- 32-2-650-2839; f- 32-2-650-2796 phdubois@ulb.ac.be

DUBOUCHET, ALEJANDRO  
CENTER FOR MARINE CONSERVATION  
1725 DESALES ST, SUITE 600, NW  
WASHINGTON, DC 20036  
p- 202-429-5609 ext. 260 dubouca@dccmc.mhs.compuserve.com

DURHAM, J. WYATT  
UNIVERSITY OF CALIFORNIA  
DEPT. OF PALEONTOLOGY  
BERKELEY, CA 94720

EBERT, THOMAS A.  
SAN DIEGO STATE UNIVERSITY  
DEPARTMENT OF BIOLOGY  
SAN DIEGO, CA 92182-4614  
p- 619-595-5965; f- 619-594-5676 tebert@sunstroke.sdsu.edu

EBLE, GUNTHER J.  
SMITHSONIAN INSTITUTION  
NATIONAL MUSEUM OF NATURAL HISTORY  
ROOM E121  
WASHINGTON, D.C. 20560  
p-202-633-9322; ebleg@nmnh.si.edu

ECKELBARGER, KEVIN  
UNIVERSITY OF MAINE  
DARLING MARINE CENTER  
25 CLARK'S COVE ROAD  
WALPOLE, ME 04573  
p- 207-563-3146; f- 207-563-3119

ECKERT, JAMES D.  
16 WEST HAMPTON RD.  
ST. CATHERINE'S  
ONTARIO, L2T 3E5 CANADA

ECKHAUT, IGOR  
UNIVERSITE DE MONS-HAINAUT  
LAB DE BIOLOGIE MARINE  
19 AVE MAISTRIAU  
7000 MONS, BELGIUM  
p- 32-65-37-34-39; f- 32-65-37-34-34 biomarum@umh.ac.be

EERNISSE, DOUGLAS J.  
CALIFORNIA STATE UNIVERSITY  
DEPT BIOLOGICAL SCIENCES  
FULLERTON, CA 92834-6850  
deernisse@fullerton.edu

ELISEIKINA, MARINA G.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
p- (4232) 31-11-78; f- (4232) 31-09-00 aisa@vld.global.one.ru

ELLERS, OLAF W.  
UNIV CALIFORNIA, DAVIS  
DIV BIOL SCIENCES  
SEC EVOLUTION & ECOLOGY  
DAVIS, CA 95616-8755  
p- 916-752-1113; f- 916-752-1449 owellers@ucdavis.edu

ELLINGTON, W. ROSS  
FLORIDA STATE UNIVERSITY  
DEPT. OF BIOLOGICAL SCI., B157  
TALLAHASSEE, FL 32306

EMERSON, CAROLYN J.  
MEMORIAL UNIV. OF NEWFOUNDLAND  
BIOLOGY DEPARTMENT  
ST. JOHN'S, NF, A1B 3X9 CANADA

EMLET, RICHARD B.  
UNIVERSITY OF OREGON  
OREGON INST MARINE BIOLOGY  
CHARLESTON, OR 97420  
p- 541-888-2581 ext 211; f- 541-888-3250 remlet@oimb.uoregon.edu

EMSON, ROLAND  
KING'S COLLEGE  
DIVISION LIFE SCIENCES  
LONDON, WC2 R2LS ENGLAND, U.K.  
p- 44-1-71-333-4489; f- 44-1-71-333-4500

ENDELMAN, LEONID G.  
PALEONTOLOGICAL INSTITUTE  
RUSSIAN ACADEMY OF SCIENCES  
PROFSOYUSNAYA UL.I23  
MOSCOW, 117647 RUSSIA

ENGSTROM, NORMAN  
NORTHERN ILLINOIS UNIVERSITY  
COL. OF LIBERAL ARTS & SCIENCES  
OFFICE OF DEAN  
DEKALB, IL 60115

ESCOUBET, P.  
MARINELAND-AQUARIUMS  
306 AVENUE MOZART  
ANTIBES, 06600 FRANCE

ETNIER, SHELLEY  
DUKE UNIVERSITY  
243 BIOSCI  
BOX 90325  
DURHAM, NC 27708-0325  
f- 919-684-6168

ETTENSohn, FRANK R.  
UNIVERSITY OF KENTUCKY  
DEPT GEOLOGICAL SCIENCES  
101 SLONE BUILDING  
LEXINGTON, KY 40506-0053  
p- 606-257-1401; f- 606-323-1938 geofre@ukcc.uky.edu

EVDOKIMOV, VLADIMIR V.  
TINRO  
PACIFIC RESEARCH FISHERY CENTER  
4 SHEVCHENKO ALLEY  
VLADIVOSTOK, 690600 RUSSIA  
p- 7(4232)25-77-83; f- 7(4232)25-95-04 root@tinro.marine.su

EYCLERS, JOHN P.  
N.C. MUSEUM OF LIFE & SCIENCE  
PO BOX 15190, 433 MURRAY AVE.  
DURHAM, NC 27704  
p- 919-220-5429; f- 919-220-5575

FANKBONER, PETER V.  
SIMON FRASER UNIVERSITY  
DEPT. OF BIOLOGICAL SCIENCES  
BURNABY, B.C., V5A 1S6 CANADA  
p- 604-291-4475

FARMANFARMAIAN, ALLAHVERDI  
RUTGERS UNIVERSITY  
NELSON BIOLOGY LAB  
P.O. BOX 1059  
PISCATAWAY, NJ 08855-1059  
p- 908-463-8200; f- 908-932-5870

FAY, ROBERT O.  
OKLAHOMA GEOLOGICAL SURVEY  
ENERGY CENTER  
100 E. BOYD, ROOM N 131  
NORMAN, OK 73019-0628  
p- 405-325-3031

FECHTER, HUBERT  
ZOOLOGISCHE STAATSSAMMLUNG  
MUNCHHAUSENSTR. 21  
MUENCHEN 60, D-8000 GERMANY

FEDER, HOWARD M.  
UNIV. OF ALASKA, FAIRBANKS  
INSTITUTE OF MARINE SCIENCE  
FAIRBANKS, AK 99775  
p- 907-474-7956; f- 907-474-7204 feder@ims.alaska.edu

FELDMAN, ABBY L.  
UNIVERSITY COLLEGE  
ZOOLOGY DEPARTMENT  
GALWAY, IRELAND  
p- 353-91-750379; f- 353-91-750526 abby.l.feldman@ucg.ie

FELL, F. JULIAN  
BOX 222  
1555 WELLS PLACE  
ERRINGTON, B.C., V0R 1V0 CANADA  
p- 250-248-4295; f- 250-248-4295 jfell@macn.bc.ca

FERAL, JEAN-PIERRE  
OBSERVATOIRE OCEANOGR DE BANYULS  
DEPT BIOL CELLULAIRE & MOLECULAIRE  
BP 44  
BANYULS-SUR-MER CEDEX, 66651 FRANCE  
p- 33-68-88-73-18; f- 33-68-88-73-98 feral@arago.univ-perp.fr

FERBER, ILANA  
7 MOSHE HESS ST.  
JERUSALEM, 94 185 ISRAEL

FERGUSON, JOHN C.  
GMSL  
ECKERD COLLEGE  
4200 54TH AVE SOUTH  
ST. PETERSBURG, FL 33711  
p- 813-864-8441; f- 813-864-7964 fergusjc@eckerd.edu

FERNANDEZ, CATHERINE  
CEVAREN  
UNIV DE CORSE  
B.P. 52  
CORTE, 20250 FRANCE  
p- 33-95-45-00-75; f- 33-95-45-21-51 egel@lotus.univ-corse.fr

FERRAND, JEAN-GUY  
UNIVERSITE D'ORLEANS  
LAB BIOL CELLULAIRE & ANIMALE  
UER SCIENCES  
ORLEANS CEDEX, 45046 FRANCE

FIERRO, JUAN F.T.  
MUSEO DE HISTORIA NATURAL DE CONCEPCION  
CASILLA 1054  
CONCEPCION, CHILE

FISHELSON, LEV  
TEL-AVIV UNIVERSITY  
DEPT. OF ZOOLOGY  
155 HERZL ST.  
TEL-AVIV, ISRAEL  
p- 972-3-6409812; f- 972-3-6409403 zool@taunos

FLAMMANG, PATRICK  
UNIVERSITE DE MONS-HAINAUT  
LAB DE BIOLOGIE MARINE  
19 AVE MAJSTRIAU  
7000 MONS, BELGIUM  
p- +32-65-373439; f- +32-65-373434 patrick.flammang@umh.ac.be

FLEMING, TIMOTHY P.  
2025 OROFINO GULCH  
HELENA, MT 59601

FOLLOSCO, MINDA P.  
DE LA SALLE UNIVERSITY  
MAR BIOL STA - COLLEGE OF SCIENCE  
2401 TAFT AVE, BOX 3819  
MANILA 1004, PHILIPPINES  
p- (+63-2) 524-04-51; f- (+63-2) 524-04-51 cosmpf@mail.dlsu.edu.ph

FOLTZ, DAVID  
LOUISIANA STATE UNIVERSITY  
DEPT ZOOLOGY & PHYSIOLOGY  
RM 202 LIFE SCIENCES BLDG  
BATON ROUGE, 70803-1725  
p- 504-388-1737; f- 504-388-1763 zodfol@lsuvm.sncc.lsu.edu

FONTAINE, ARTHUR R.  
UNIVERSITY OF VICTORIA  
DEPT. OF BIOLOGY  
VICTORIA, B.C., V8W 2Y2 CANADA  
p- 604-721-7131; f- 604-721-7120

FORET, TIMOTHY W.  
UNIV OF SOUTH FLORIDA  
DEPARTMENT OF BIOLOGY  
4202 EAST FOWLER AVE, LIF 136  
TAMPA, FL 33620-5150  
p- 813-632-0476 tforet@chuma.cas.usf.edu

FOSTER, MERRILL W.  
BRADLEY UNIVERSITY  
DEPT. OF GEOLOGICAL SCIENCES  
PEORIA, IL 61625  
p- 309-677-2352 fossil@bradley.bradley.edu

FOUDA, MOUSTAFA  
AL-ASHAR UNIVERSITY  
DEPT. OF ZOOLOGY  
NASR-CITY  
CAIRO, EGYPT

FOX, DAVID J.  
UNIV TENNESSEE, KNOXVILLE  
DIVISION OF BIOLOGY  
M303 WALTERS LIFE SCI BLDG  
KNOXVILLE, TN 37996-0830  
p- 423-974-2978; f- 423-974-4057 djfox@utk.edu

FRANKEL, EDGAR  
UNIVERSITY OF TECHNOLOGY  
GEOLOGY DEPARTMENT  
PO BOX 123, BROADWAY  
SYDNEY, NSW 2007, AUSTRALIA  
p- (02)-9514-1762; f- (02)-9514-1755 e.frankel@uts.edu.au

FRANKLIN, JUAN T.FIERRO  
MUSEO REGIONAL DE CONCEPCION  
CASILLA 1054  
CONCEPCION, CHILE

FRANKLIN, SUE  
SYDNEY UNIVERSITY  
ZOOLOGY DEPARTMENT A08  
SYDNEY, NSW 2006, AUSTRALIA

FRANZEN-BENGTSON, CHRISTINA  
SWEDISH MUSEUM NAT HIST  
DEPT PALAEOZOOLOGY  
BOX 50007  
STOCKHOLM, S-10405 SWEDEN  
p- 46-8-666-4177; f- 46-8-666-4184

FREEMAN, STEVEN M.  
UNIVERSITY OF NORTH WALES  
SCHOOL OF OCEAN SCIENCES  
MENAI BRIDGE  
ANGLESEY, GWYNEDD, NORTH WALES, U.K.  
p- 01248-351151 osp481@sos.bangor.ac.uk

FREST, TERENCE  
2517 NORTHEAST 65TH ST.  
SEATTLE, WA 98115-7125

FUJITA, TOSHIHIKO  
NATIONAL SCIENCE MUSEUM  
DEPARTMENT OF ZOOLOGY  
HYAKUNIN-CHO 3-23-1  
SHINJUKU, TOKYO 169, JAPAN  
p- 03-3364-7121; f- 03-3364-7104 fujita@kahaku.go.jp

FUKUYAMA, ALLAN K.  
7019 157th ST. SW  
EDMONDS, WA 98026  
p- 206-745-3349; f- 206-745-3349

GAGE, JOHN D.  
SCOTTISH ASSOC. MARINE SCIENCE  
PO BOX 3  
OBAN, ARGYLL  
PA34 4AD SCOTLAND, U.K.  
p- 0044(0) 1631 567821; f- 0044(0) 1631-565518 jdg@dml.ac.uk

GAGNON, JEAN-MARC  
CANADIAN MUSEUM OF NATURE  
CHIEF OF INVERTEBRATE COLLNS  
PO BOX 3443, STATION D  
OTTAWA, ONTARIO, K1P 6P4 CANADA  
p- 613-364-4066; f- 613-364-4027 jmgagnon@mus-nature.ca

GAHN, FOREST  
2810 STRATFORD AVE, APT 4  
CINCINNATI, OH 45220  
fjg@geology.byu.edu

GALLEMI, JAUME  
MUSEU DE GEOLOGIA  
PARC DE LA CIUTADELLA S/N  
BARCELONA, 08003 SPAIN  
p- 34-33-19-68-95; f- 34-33-19-93-12

GEBRUK, ANDREY V.  
P.P. SHIRSHOV INST OCEANOLOGY  
RUSSIAN ACADEMY OF SCIENCES  
NAKHIMOVSKY PR., 36  
MOSCOW, 117218 RUSSIA  
p- +7 095 129 21 18; f- +7 095 124 59 83  
mironov@bentos.ioras.msk.ru

GENTIL, FRANCK A.  
UNIVERSITE PARIS 6  
STATION BIOLOGIQUE BP74  
ROSCOFF, F-29682 FRANCE  
p- (33)98.29.23.15; f- (33)98.29.23.24 gentil@sb-roscoff.fr

GEORGE, SOPHIE B.  
GEORGIA SOUTHERN UNIV  
BIOLOGY DEPT, LANDRUM BOX 8042  
STATESBORO, GA 30460-8042  
p- 912-681-0599; f- 912-681-0845 georges@gsaix2.cc.gasou.edu

GERONIMO, ABELARDO L.  
DE LA SALLE UNIVERSITY  
DEPARTMENT OF BIOLOGY  
2401 TAFT AVENUE  
MANILA 1004, PHILIPPINES

GHYOOT, MARIANNE  
UNIVERSITE LIBRE DE BRUXELLES  
LABORATOIRE BIOL. MARINE CP 160  
AVE F.D. ROOSEVELT 50  
BRUXELLES, B-1050 BELGIUM

GIBSON, MICHAEL A.  
THE UNIVERSITY OF TENNESSEE  
DEPT GEOSCIENCE & PHYSICS, 222 EPS BLDG  
MARTIN, TN 38238-5039  
p- 901-587-7435; f- 901-587-7443 mgibson@utm.edu

GIL CID, DOLORES  
UNIVERSIDAD COMPLUTENSE DE MADRID  
DEPTO DE PALEONTOLOGIA  
FAC DE CIENCIAS GEOLOGICAS  
MADRID, 28040 SPAIN  
p- 34-1-3944856; f- 34-1-3944849 gilcid@eucmos.sim.ucm.es

GINANOVA, TALIA T.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
p- (4232) 31-11-78; f- (4232) 31-09-00 aisa@vld.global.one.ru

GIORDANO DE FREITAS, SOLANGE  
MUSEU NACIONAL QUINTA DA BOA  
VISTA/UF RJ, DEPTO INVERTEBR.  
SAO CRISTOVAO, RJ, 20942 BRAZIL

GIUDICE, GIOVANNI  
DIPARTIMENTO DI BIOLOGIA  
CELLULARE E DELLO SVILUPPO  
VIALE DELLE SCIENZE  
PALERMO, 90128 ITALY  
p- 0039-91-424786; f- 0039-91-424337 dipbio@mbdx.unipa.it



GLUCHOWSKI, EDWARD L.  
SILESIAN UNIVERSITY  
DEPT OF EARTH SCIENCES  
BEDZINSKA STR. 60  
41-200 SOSNOWIEC, POLAND  
p- 48-32-667271 (433); f- 48-32-664351

GLYNN, PETER W.  
RSMAS  
UNIVERSITY OF MIAMI  
4600 RICKENBACKER CAUSEWAY  
MIAMI, FL 33149  
p- 305-361-4151

GOGGIN, LOUISE C.  
CSIRO MARINE RESEARCH  
GPO BOX 1538  
HOBART, TAS 7001, AUSTRALIA  
p- 61-03-6232-5101; f- 61-03-6232-5485 louise.goggin@ml.csiro.au

GOLDBERG, ARTHUR S.  
SOUTHAMPTON COLLEGE  
OF LONG ISLAND UNIVERSITY  
DIVISION OF NATURAL SCIENCES  
SOUTHAMPTON, NY 11968  
p- 516-287-8406; f- 516-287-4094

GOLDEN, JULIA  
UNIVERSITY OF IOWA  
DEPT. OF GEOLOGY  
121 TROWBRIDGE HALL  
IOWA CITY, IA 52242

GOLDSCHMID, ALFRED  
UNIVERSITÄT SALZBURG  
ZOOLOGISCHES INSTITUT  
AKADEMIESTR 26  
SALZBURG A-5020, AUSTRIA

GONGADZE, GURAM  
TBILISI STATE UNIVERSITY  
DEPT GEOLOGY & PALEONTOLOGY  
CHAVCHAVADZE AVE 1  
TBILISI, 380028 GEORGIA  
p- +995-32-221103; f- +995-32-221103 erekle@tsuio.edu.ge

GOODING, RICHARD U.  
19 HIGHGATE PARK  
ST. MICHAEL, BH10, BARBADOS, WEST INDIES  
p- 809-427-9436

GOUVEIA-MONTEIRO, ANA MARIA  
IBILCE - UNESP  
DEPTO. ZOOLOGIA  
CAIXA POSTAL 136  
SAO JOSE DO RIO PRETO, SP, 15054-000 BRAZIL  
p- 0172-24-4966; f- 0172-24-8692  
anamaria@condor.polo.ibilce.unesp.br

GRABOWSKY-KAAIALII, GAIL L.  
CHAMINADE UNIVERSITY  
DEPT BIOLOGY  
3140 WAIALAE AVE  
HONOLULU, HI 96816-1578  
p- 808-735-4807; f- 808-735-4846

GRANGE, KEN R.  
NZ OCEANOGRAPHIC INSTITUTE  
P.O. BOX 14901, KILBIRNIE  
WELLINGTON, NEW ZEALAND

GRAS, HERIBERT  
UNIV. KOLN, ZOOLOGICAL INSTITUTE  
WEYERTAL 119  
5000 KOLN 41, GERMANY

GREENSTEIN, BENJAMIN J.  
SMITH COLLEGE  
DEPARTMENT OF GEOLOGY  
NORTHAMPTON, MA 01063  
p- 413-585-3947; f- 413-585-3786 bgreenst@science.smith.edu

GRENOBLE, MUSEUM DE  
1 RUE DOLOMIEU  
GRENOBLE, 38000 FRANCE

GROSJEAN, PHILIPPE  
UNIVERSITE LIBRE DE BRUXELLES  
LAB DE BIOL MARINE  
AVE F.D. ROOSEVELT 50  
BRUXELLES, B-1050 BELGIUM  
p- 32-2-650.2970; f- 32-2-650.27.56 100451.1266@compuserve.com

GROSZE NIPPER, MARION  
NIWA  
GATE 10, SILVERDALE ROAD  
PO BOX 11-115  
HILLCREST, HAMILTON, NEW ZEALAND  
nipper@hamilton.niwa.cri.nz

GROVES, CATHY  
NATURAL HISTORY MUSEUM L.A. COUNTY  
900 EXPOSITION BLVD.  
LOS ANGELES, CA 90007  
p- 213-744-3527; f- 213-746-2999 cgroves@lam.mus.ca.us

GRUZOV, E.N.  
ZOOLOGICAL INSTITUTE  
ACADEMY OF SCIENCES  
LENINGRAD 199164, RUSSIA

GRYGIER, MARK J.  
LAKE BIWA MUSEUM  
OROSHIMO 1091  
KUSATSU, SHIGA 525, JAPAN  
p- +81-775-68-4811; f- +81-775-68-4850

GUENSBURG, THOMAS E.  
ROCK VALLEY COLLEGE  
PHYSICAL SCIENCE DIVISION  
3301 N. MULFORD ROAD  
ROCKFORD, IL 61101  
f- 815-654-4438

GUDMUNDSSON, JON. G.  
MIDVAGEN 41  
220 HAFNARFJORDUR, ICELAND

GUERRAZZI, MARIA C.  
RUA TENENTE HARAUDO E. DE SOUZA SANTOS 233  
APTO 3 - ED VISTA ALEGRE  
CAMPINAS-SP, GUANABARA, 13070-600 BRAZIL  
p- 055-019-243-2841; f- 055-019-239-3124  
cospra@obelix.unicamp.br

2  
GUILLE, ALAIN  
LABORATOIRE ARAGO  
OBSERVATOIRE OCEANOLOGIQUE  
BANYULS-SUR-MER, 66650 FRANCE  
p- 68 88 00 40; f- 68 88 16 99 aguille@oob-arago.univ-perp.fr

GUILLOU, MONIQUE  
LAB.D'OCEANOGRAPHIE BIOLOGIQUE  
URA CNRS D 1513  
6 AVE VICTOR LE GORGEU, BP 809  
BREST CEDEX, 29285 FRANCE  
p- 33-98-01-62-73; f- 33-98-01-63-11 mguillou@univ-brest.fr

GUISADO ARANGUIZ, CHITA B.  
UNIVERSIDAD CATOLICA DEL NORTE  
DEPARTAMENTO DE BIOLOGIA MARINA  
CASILLA 117  
COQUIMBO, CHILE

GUOMUNDSSON, JON E.  
MIDVANGUR 41  
IS-220 HAFNARFJORDUR, ICELAND

GURREA, ISIDRE  
BLES A 3  
BARCELONA, 08004 SPAIN  
p- (34-3) 442-5142; f- (34-3) 454 1801

GUTIERREZ, JUAN E.  
UNIVERSIDAD DE CHILE  
INSTITUTO INVEST. OCEANOLOGIAS  
CASILLA 1240  
ANTOFAGASTA, CHILE

GUTT, JULIAN  
ALFRED-WEGENER-INSTITUTE FUR  
POLAR UND MEERESFORSCHUNG  
COLUMBUS-STRASSE  
BREMERHAVEN, D-27568 GERMANY  
p- +49-471-4831333; f- +49-471-4831149 jgutt@awi-bremerhaven.de

HADEL, VALERIA FLORA  
CEBIMar-USP  
UNIVERSIDADE DE SAO PAULO  
C.P. 83  
SAO SEBASTIAO-SP, 11600-970 BRAZIL  
p- 5-50-12-452-1655; f- 5-50-12-452-1052 vafhadel@usp.br

HAGEN, NILS T.  
BODO COLLEGE  
DEPT OF FISHERIES & NAT. SCI.  
N-8002 BODO, NORWAY  
p- 47-75-51-73-55; f- 47-75-51-73-49 nils.hagen@hibo.no

HAMADA, SPENCER  
WEST GEORGIA COLLEGE  
BIOLOGY DEPARTMENT  
CARROLLTON, GA 30118

HAMEL, JEAN-FRANCOIS  
SOC D'EXPLORATION & DE VALORISATION  
DE L'ENVIRONNEMENT (SEVE)  
90 NOTRE-DAME EST  
RIMOUSKI, QUEBEC, G5L 1Z6 CANADA  
p- 418-724-1770; f- 418-723-1739 jf\_hamel@uqar.quebec.ca

HAMZA HASSAN, MOHAMED  
NAT'L INST OCEANOGR & FISHERIES  
RED SEA AND SUEZ CANAL BRANCH  
P.O. BOX 182  
SUEZ, EGYPT  
p- 064 228862

HARMELIN, JEAN-GEORGES  
STATION MARINE D'ENDOUME  
13007 MARSEILLE, FRANCE

HARRIOTT, VICKI  
UNIVERSITY OF QUEENSLAND  
ZOOLOGY DEPARTMENT  
ST. LUCIA  
BRISBANE, QLD 4067, AUSTRALIA

HARRIS, LARRY G.  
UNIVERSITY OF NEW HAMPSHIRE  
ZOOLOGY DEPARTMENT  
DURHAM, NH 03824  
p- 603-862-3897; f- 603-862-3784 lharris@christa.unh.edu

HARROLD, CHRISTOPHER  
MONTEREY BAY AQUARIUM  
RESEARCH DIVISION  
886 CANNERY ROW  
MONTEREY, CA 93940  
p- 408-649-6466 charrold@mbayaq.org

HARTMANN, G.  
ZOOLOGISCHES INSTITUT  
ZOOLOGISCHES MUSEUM  
MARTIN LUTHER KING PLATZ 3  
2 HAMBURG 13, GERMANY

HAUDE, REIMUND  
INSTITUTE MUSEUM GEOL PALAONT  
GOLDSCHMIDT STR. 3  
GOTTINGEN, D-37077 GERMANY  
p- 49-5-51-39-79-57; f- 49-5-51-39-79-96 rhaude@uni-goettingen.de

HAVARDSSON, BJORGOLFUR  
UNIVERSITY OF BERGEN  
DEPT. FISHERIES & MARINE BIOLOGY  
BERGEN HIGH TECHNOLOGY CENTER  
BERGEN, 5020 NORWAY  
p- 47-55544496; f- 47-55544450 bjorgolfur.havardsson@ifm.uib.no

HAY, MARK  
INSTITUTE OF MARINE SCIENCES  
UNIV NORTH CAROLINA, CHAPEL HILL  
3431 ARENDELL STREET  
MOREHEAD CITY, NC 28557  
p- 919-726-6841; f- 919-726-2426 seaweed@email.unc.edu

HAYASHI, HIROSHI  
NAGOYA UNIVERSITY  
SUGASHIMA MARINE BIOL. LAB.  
SUGASHIMA  
TOBA, MIE 517, JAPAN

HECKER, R. T.  
PALEONTOLOGICAL INSTITUTE  
ACADEMY OF SCIENCE USSR  
LENINSKY PROSPECT 33  
MOSCOW V-71, RUSSIA

HEDDLE, DUNCAN  
UNIVERSITY OF ABERDEEN  
DEPARTMENT OF ZOOLOGY  
TILLYDRONE AVE.  
ABERDEEN, AB9 2TN SCOTLAND, UK  
p- 1224-272888; f- 1224-272396

HEINZELLER, THOMAS E.  
UNIVERSITY OF MUNICH  
DEPT. NEUROANATOMY  
PETTENKOFERSTRASSE 11  
MUNICH, D-80336 GERMANY  
p- 49-89-51-60-48-64; f- 49-89-51-60-48-57

HELLER, JAMES A.  
THE UNIVERSITY OF TENNESSEE  
DEPT. OF GEOLOGICAL SCIENCES  
KNOXVILLE, TN 37921

HENDLER, GORDON  
L.A. COUNTY MUSEUM, NAT HIST  
LIFE SCIENCES  
900 EXPOSITION BLVD.  
LOS ANGELES, CA 90007  
p- 213-744-6391; f- 213-746-2999 hendler@bcf.usc.edu

HERDENDORF, CHARLES E.  
OHIO STATE UNIVERSITY  
ZOOLOGY DEPT.  
1507 CLEVELAND ROAD EAST, #410  
HURON, OH 44839-9725  
p- 419-433-3266; f- 419-433-3266 herdendorf.1@osu.edu

HERRERA, JOAN  
UNIVERSITY OF FLORIDA  
DEPARTMENT OF ZOOLOGY  
GAINESVILLE, FL 32611  
herrera@zoo.ufl.edu

HERRING, P.J.  
INST OCEANOGRAPHIC SCIENCES  
BROOK ROAD, WORMLEY, GODALMING  
SURREY, GU8 5UB ENGLAND, U.K.  
p- 1428-684141; f- 1428-683824

HESS, HANS  
IM GERSTENACKER 8  
CH-4102 BINNINGEN, SWITZERLAND  
p- (061) 421-4221; f- (061) 421-4253

HIDAKA, MICHIO  
UNIVERSITY OF THE RYUKYUS  
COLLEGE OF SCIENCE, DEPT BIOLOGY  
SENBARU 1, NISHIHARA-CHO  
OKINAWA 903-01, JAPAN

HIGHSMITH, RAYMOND C.  
UNIVERSITY OF ALASKA  
INSTITUTE OF MARINE SCIENCES  
FAIRBANKS, AK 99775-7220  
p- 907-474-7836; f- 907-474-5804 highsmith@ims.alaska.edu

HILL, ROBERT B.  
UNIV OF RHODE ISLAND  
DEPARTMENT ZOOLOGY  
KINGSTON, RI 02881-0816  
p- 401-874-2669; f- 401-874-4256 gsy101@uriacc.uri.edu

HILL, SOPHIE  
3807 ROCINANTE BLVD., #207B  
TAMPA, FL 33613-4852  
p- 813-971-4174 shill@chuma.cas.usf.edu

HIMMELMAN, JOHN H.  
UNIVERSITE LAVAL  
DEPARTMENT DE BIOLOGIE  
QUEBEC, G1K 7P4 CANADA  
p- 418-656-5230; f- 418-656-2339 john.himmelman@bio.ulaval.ca

HOBERG, MAX K.  
UNIVERSITY OF ALASKA FAIRBANKS  
INSTITUTE OF MARINE SCIENCE  
FAIRBANKS, AK 99775  
p- 907-474-7066; f- 907-474-7204 fmmkh@aurora.alaska.edu

HODGSON, ALAN N.  
RHODES UNIVERSITY  
DEPT ZOOLOGY & ENTOMOLOGY  
P.O. BOX 94  
GRAHAMSTOWN 6140, SOUTH AFRICA  
p- (461) 318526; f- (461) 24377 zoah@giraffe.ru.ac.za

HOFFMAN, JUAN TORRES  
UNIVERSITY OF WASHINGTON  
DEPT OF ZOOLOGY  
BOX 351800  
SEATTLE, WA 98195-1800  
p- 206-525-6007 hoffman@zoology.washington.edu

HOLTERHOFF, PETER F.  
UNIVERSITY OF ARIZONA  
DEPT GEOSCIENCES, GOULD-SIMPSON BLDG.  
TUCSON, AZ 85721  
p- 520-621-4618; f- 520-621-2672 holterho@ccit.arizona.edu

HOOD, SARAH C.  
P.O. BOX 14502  
RENO, NV 89507-4502  
p- 702-827-1883 hood@med.unr.edu

HOOPER, ROBERT G.  
MEMORIAL UNIVERSITY, NF  
DEPARTMENT OF BIOLOGY  
ST. JOHN'S, NF, A1B 3X9 CANADA  
p- 709-737-7494; f- 709-737-3018 rhooper@morgan.ucc.mun.ca

HOPKINS, THOMAS S.  
THE UNIVERSITY OF ALABAMA  
SCIENTIFIC COLLECTIONS FACILITY  
DEPT BIOL SCI, BIODIVERSITY & SYSTEMATICS  
TUSCALOOSA, AL 35487-0344  
p- 205-348-1791; f- 205-348-6460 thopkins@biology.as.ua.edu

HOROWITZ, ALAN STANLEY  
INDIANA UNIVERSITY  
DEPT GEOLOGICAL SCIENCES  
1005 EAST TENTH STREET  
BLOOMINGTON, IN 47405-1403  
p- 812-855-3536; f- 812-855-7899  
horowitz@gismo.geology.indiana.edu

HOSHI, MOTONORI  
TOKYO INST. TECHNOLOGY  
DEPT LIFE SCIENCE, 4259 NAGATSUTA  
YOKOHAMA 226, JAPAN  
p- 81-45-924-5720; f- 81-45-924-5777 mhoshi@bio.titech.ac.jp

HOTCHKISS, FREDERICK H.C.  
26 SHERRY ROAD  
HARVARD, MA 01451  
p- 800-225-8330 EXT 138; f- 617-899-1552

HOTTENROTT, SUSAN I.  
SMITHSONIAN INSTITUTION  
NAT. MUSEUM OF NATURAL HISTORY  
ROOM W319, MAIL STOP 163  
WASHINGTON, DC 20560  
p-202-786-2578; f-202-357-3043; sih@gwis2.circ.gwu.edu

HSUEH, PAN-WEN  
NATL MUSEUM NATURAL SCIENCE  
INVERTEBRATE ZOOLOGY  
1 KUAN CHIEN RD.  
TAICHUNG, TAIWAN  
p- 04-322-6940; f- 04-322-2290

HUDA, ISHRAT ARA  
ZOOLOGICAL SURVEY DEPARTMENT  
NISHTAR ROAD  
KARACHI, PAKISTAN

HULBERT, ALAN W.  
UNIVERSITY OF NORTH CAROLINA  
ZOOLOGY DEPARTMENT  
WILMINGTON, NC 28403

IMAOKA, TOHRU  
KATATA 2804-3  
SHIRAHAMA, NISHIMURO  
WAKAYAMA, 649-22, JAPAN

IRIMURA, SEIICHI  
NATIONAL SCIENCE MUSEUM, DEPT ZOO  
3-23-1 HYAKUNINCHO, SHINJIKU-KU  
TOKYO 169, JAPAN  
p- 81-3-3364-2311; f- 81-3-3364-7104

ISAEVA, VALERIA V.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
f- 4232-310-900 faribm@visenet.marine.su

ISHIDA, YOSHIKI  
HITOTSUBASHI HIGH SCHOOL  
1-12-13, HIGASHIKANDA CHIYODA-KU  
TOKYO 101, JAPAN  
p- 33-862-6061; f- 33-687-1862

IVY, W. GRISILDA  
TRC OF CMFRI  
90 NORTH BEACH ROAD, TUTICORIN  
TAMIL NADU, 628001 INDIA

IWATA, K. S.  
OKAYAMA UNIVERSITY, DEPT BIOLOGY  
TSUSHIMA NAKA 3 CHOME  
OKAYAMA 700, JAPAN

JABLONSKI, DAVID  
UNIVERSITY OF CHICAGO  
DEPT. GEOPHYSICAL SCIENCES  
5734 S. ELLIS AVENUE  
CHICAGO, IL 60637  
p- 312-702-8163; f- 312-702-9505

JACOBSEN, NANCY A.  
MONTEREY BAY AQUARIUM  
RESEARCH INST  
P.O. BOX 628  
MOSS LANDING, CA 95039-0628  
p- 408-775-1718; f- 408-775-1718 jana@mbari.org

JAECKLE, WILLIAM B.  
ILLINOIS WESLEYAN UNIVERSITY  
DEPT BIOLOGY  
P.O. BOX 2900  
BLOOMINGTON, IL 61702  
p- 309-569-3779; f- 309-569-3779 wjaeckle@titan.iwu.edu

JAGT, JOHN W.M.  
NATUURHISTORISCH MUSEUM MAASTRICHT  
DIESNT KUNST, CULTUUR EN ONDERWIJS  
PO BOX 882  
6200 AW MAASTRICHT, NETHERLANDS  
p- +31-43-350-5479; f- +31-43-350-5475 mail@nhmmaastricht.nl

JAMES, DANIEL B.  
TRC OF CMFRI  
90 NORTH BEACH ROAD  
TUTICORIN  
TAMIL NADU, 628001 INDIA  
p- 91-20102; f- 0461-30198

JAMIESON, GLEN S.  
PACIFIC BIOLOGICAL STATION  
FISHERIES RESEARCH BRANCH  
NANAIMO, B.C., V9R 5K6 CANADA  
p- 604-756-7223; f- 604-756-7138 jamiesong@pbs.dfo.ca

JANGOUX, MICHEL  
UNIVERSITE LIBRE DE BRUXELLES  
LABORATOIRE BIOL. MARINE CP 160  
AVE F.D. ROOSEVELT 50  
BRUXELLES, B-1050 BELGIUM  
mjangoux@ulb.ac.be

JANIES, DANIEL A.  
AMERICAN MUSEUM OF NATURAL HISTORY  
DEPARTMENT OF INVERTEBRATES  
CENTRAL PARK WEST AT 79TH STREET  
NEW YORK, NY 10024-5192  
p- 212-769-5639; f- 212-769-5783 djanies@amnh.org

JARAMILLO, EDUARDO  
UNIVERSIDAD AUSTRAL DE CHILE  
INSTITUTO DE ZOOLOGIA  
CASILLA 567  
VALDIVIA, CHILE

JEAL, FRANK  
TRINITY COLLEGE  
ZOOLOGY DEPARTMENT  
DUBLIN 2, IRELAND

JEFFERIES, R.P.S.  
BRITISH MUSEUM, NATURAL HISTORY  
DEPARTMENT OF PALEONTOLOGY  
CROMWELL ROAD  
LONDON, SW7 5BD ENGLAND, U.K.  
p- 171-938-9228; f- 171-938-9277 chj@nhm.ac.uk

JEFFERY, CHARLOTTE H.  
THE NATURAL HISTORY MUSEUM  
DEPT PALAEONTOLOGY  
CROMWELL ROAD  
LONDON, SW7 5BD ENGLAND, U.K.  
p- 0171-938-9228; f- 0171-938-9277 [chj@nhm.ac.uk](mailto:chj@nhm.ac.uk)

JELL, PETER A.  
QUEENSLAND MUSEUM  
P.O. BOX 3300  
SOUTH BRISBANE, QLD, 4101 AUSTRALIA  
p- 617-3840-7664; f- 617-3846-1226 [p.jell@mailbox.uq.oz.au](mailto:p.jell@mailbox.uq.oz.au)

JELLETT, JOANNE F.  
47 WAKE UP HILL ROAD  
RR#1, CHESTER BASIN  
NOVA SCOTIA, B0J 1K0 CANADA  
[jbiotek@atcon.com](mailto:jbiotek@atcon.com)

JENSEN, MARGIT  
ZOOLOGICAL MUSEUM  
UNIVERSITY OF COPENHAGEN  
UNIVERSITETSPARKEN 15  
COPENHAGEN, DK 2100 DENMARK  
p- 45-3532-1116; f- 45-3532-1010

JOHNSON, SONKE  
UNIV NORTH CAROLINA, CHAPEL HILL  
DEPT BIOLOGY  
CB#3280, COKER HALL  
CHAPEL HILL, NC 27599-3280  
p- 919-962-5017; f- 919-962-1625 [sonkejo@email.unc.edu](mailto:sonkejo@email.unc.edu)

JOHNSON, CRAIG R.  
UNIVERSITY OF TASMANIA  
DEPT. OF ZOOLOGY  
GPO BOX 252C  
SANDY BAY, TAS 7001, AUSTRALIA  
p- 61-3-6220-2615; f- 61-3-6220-2745 [craig.johnson@zoo.utas.edu.au](mailto:craig.johnson@zoo.utas.edu.au)

JONES, IRA  
CALIFORNIA STATE UNIVERSITY  
DEPARTMENT OF BIOLOGY  
LONG BEACH, CA 90840

JORDON, A. JOHN  
5688 51st STREET  
DELTA, B.C., V4K 3T7 CANADA

JOST, PETER M.  
KANT OBERFORSTAMT. ZURICH  
KASPAR-ESCHER-HAUS  
ZURICH CH-8090, SWITZERLAND

JUNIO-MENEZ, ANNETTE R.  
MARINE SCIENCE INSTITUTE  
UNIVERSITY OF THE PHILIPPINES  
BOX 1, DILIMAN  
QUEZON CITY, 1101 PHILIPPINES  
p- 97-60-61 TO 69 ext. 7416/7430; f- 632-922-3921; f- 632-924-76-78

JUNQUEIRA, ANDREA O.R.  
UNIV FEDERAL DO RIO DE JANEIRO  
DEPT BIOLOGIA MARINHA  
CCS Bl. A  
RIO DE JANEIRO, RJ, 21949-900 BRAZIL  
p- 5521-2802394; f- 5521-2802394 [ajunq@ufrj.bitnet](mailto:ajunq@ufrj.bitnet)

KAMMER, THOMAS W.  
WEST VIRGINIA UNIVERSITY  
DEPT. GEOLOGY & GEOGRAPHY  
P.O. BOX 6300  
MORGANTOWN, WV 26506-6300  
p- 304-293-5603; f- 304-293-6522 [kammer@wvugeo.wvnet.edu](mailto:kammer@wvugeo.wvnet.edu)

KAO, M. H.  
MEMORIAL UNIV. OF NEWFOUNDLAND  
DEPARTMENT OF BIOLOGY  
ST. JOHN'S  
NEWFOUNDLAND, A1B 3X9 CANADA

KASYANOV, VLADIMIR L.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
f- 4232-310-900 [farbim@visenet.marine.su](mailto:farbim@visenet.marine.su)

KATSURA, SHIGERU  
TOKUSHIMA UNIVERSITY  
SCHOOL OF DENTISTRY  
ORAL ANATOMY  
TOKUSHIMA, JAPAN

KAWAMURA, KAZUHIRO  
HOKKAIDO CENTRAL FISHERIES  
EXPERIMENTAL STATION  
YOICHI  
HOKKAIDO, JAPAN

KAWAUCHI, GISELE YUKIMI  
INSTITUTO DE BIOCENCIA - USP  
DEPARTAMENTO DE ZOOLOGIA  
C.P. 11461  
SAO PAULO - SP, 05422-970 BRAZIL  
p- (011) 8187575; f- (011) 8187416 [ykawauch@usp.br](mailto:ykawauch@usp.br)

KEEGAN, BRENDAN F.  
UNIVERSITY COLLEGE  
DEPARTMENT OF ZOOLOGY  
GALWAY, IRELAND  
p- 91-24411; f- 91-25700 [brendan.keegan@ucg.ie](mailto:brendan.keegan@ucg.ie)

KEESING, JOHN  
SOUTH AUSTRALIAN RESEARCH &  
DEVELOPMENT INST  
P.O. BOX 120  
HENLEY BEACH, 5022 AUSTRALIA  
p- 61-8-200-2401 ; f- 61-8-200-2481 [keesing.john@pi.sa.gov.au](mailto:keesing.john@pi.sa.gov.au)

KELLY, MAEVE S.  
SCOTTISH ASSOC. MARINE SCIENCE  
PO BOX 3  
OBAN, ARGYLL, PA34 4AD SCOTLAND, U.K.  
p- 44-1-63-156-7833; f- 44-1-63-156-5518 [mke@dml.ac.uk](mailto:mke@dml.ac.uk)

KELLY, STUART M.  
7224 16TH AVENUE  
TAKOMA PARK, MD 20912

KELSO, DONALD  
GEORGE MASON UNIVERSITY  
DEPARTMENT OF BIOLOGY  
4400 UNIVERSITY DRIVE  
FAIRFAX, VA 22030



KEOUGH, M. J.  
UNIVERSITY OF MELBOURNE  
ZOOLOGY DEPARTMENT  
ADELAIDE, S.A., AUSTRALIA

KERR, ALEXANDER M.  
OSBORNE MEMORIAL LABORATORIES  
DEPT ECOLOGY & EVOLUTIONARY BIOL  
YALE UNIVERSITY  
NEW HAVEN, CT 06520-8104  
p- 203-772-7946; f- 203-432-3854 alexander.kerr@yale.edu

KEUSKAMP, DOM  
LEIGH MARINE LABORATORY  
UNIVERSITY OF AUCKLAND  
PO BOX 349  
WARKWORTH, NEW ZEALAND  
p- 64-9-4226111; f- 64-9-4226113 d.keuskamp@auckland.ac.nz

KIKUCHI, TAJI  
KYUSHU UNIVERSITY  
AMAKUSA MARINE BIOLOGICAL LAB  
TOMIOKA, REIHOKU CHO,  
AMAKUSA, KUMAMOTO 863-25, JAPAN

KLIKUSHIN, VLADIMIR  
PETERSBURG PALEONTOLOGICAL LAB  
8 LINE 19, NO. 3  
ST. PETERSBURG, 199034 RUSSIA  
p- 218-65-97

KLINGER, THOMAS S.  
BLOOMSBURG UNIVERSITY  
DEPARTMENT OF BIOLOGY  
400 E. SECOND STREET  
BLOOMSBURG, PA 17815-1301  
p- 717-389-4118; f- 717-389-3028 tklinger@bloomu.edu

KNOTT, K. EMILY  
DEPT ECOLOGY & EVOLUTION  
SUNY, STONY BROOK  
STONY BROOK, NY 11794-5245  
p- 516-632-8588; f- 516-632-7626 keknott@life.bio.sunysb.edu

KOBAYASHI, NAOMASA  
HIROSHIMA JOGAKUIN UNIVERSITY  
LAB. ENVIRONMENTAL BIOLOGY  
USHIDA-HIGASHI, HIGASHI-KU  
HIROSHIMA 732, JAPAN  
p- 82-228-0386

KOGO, ICHIZO  
10-17 IKEDAMINAMIMACHI  
NEYAGAWA CITY, OSAKA 572, JAPAN  
p- 0720-29-4114

KOJIMA, MANABU  
TOYAMA UNIVERSITY  
DEPARTMENT OF BIOLOGY  
GOFUKU 3190  
TOYAMA SHI/KEN 930, JAPAN

KOLATA, DENNIS R.  
ILLINOIS STATE GEOLOGICAL SURV  
BASIN ANALYSIS & GEOPHYSICS SEC  
615 EAST PEABODY DRIVE  
CHAMPAIGN, IL 61820-6964  
p- 217-244-2189; f- 217-333-2830 kolata@geoserv.isgs.uiuc.edu

KOMATSU, MIEKO  
TOYAMA UNIVERSITY  
DEPARTMENT OF BIOLOGY  
FACULTY OF SCIENCE  
3190 TOYAMA 930, JAPAN  
p- 96-445-6632; f- 96-445-6549 miekok@scil.sci.toyama-u.ac.jp

KRISHNAN, MARY BAI  
MARINE BIOLOGICAL STATION  
ZOOLOGICAL SURVEY OF INDIA  
12, LEITHCASTLE STREET  
MADRAS 28, INDIA

KRISHNARAJAH, PADMINI  
UNIVERSITY OF JAFFNA  
DEPARTMENT OF ZOOLOGY  
JAFFNA, SRI LANKA

KROLL, DIETER K.  
INSTITUT FUR OKOLOGIE  
ABT HYDROBIOLOGIE  
POSTFACH 103764  
ESSEN, 45117 GERMANY  
p- 0201-183-3209; f- 0201-183-2529

KROPACH, CHAIM  
IOLR  
PO BOX 8030  
HAIFA, ISRAEL

KURIHARA, TAKEO  
SEIKAI NATIONAL FISHERIES  
RESEARCH INSTITUTE  
KOKUBU-MACHI 49  
NAGASAKI 850, JAPAN  
p- 81-958-22-8158; f- 81-958-21-4494 kurihara@snf.affrc.go.jp

KUSHLINA, VERONIKA B.  
PALEONTOLOGICAL INSTITUTE  
PROFSOJUZNAYA UL. 123  
GSP-7 V-321  
MOSCOW, 1171868 RUSSIA

LaBARBARA, MICHAEL  
THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF ANATOMY  
1025 EAST 57th STREET  
CHICAGO, IL 60637

LAHAYE, MARIE-CHRISTINE  
UNIVERSITE LIBRE DE BRUXELLES  
LABORATOIRE BIOL. MARINE CP 160  
AVE F.D. ROOSEVELT 50  
BRUXELLES, B-1050 BELGIUM

LAMBERT, PHILIP  
ROYAL BRITISH COLUMBIA MUSEUM  
NATURAL HISTORY SECTION  
BOX 9815, STN PROV GOVT  
VICTORIA, B.C., V8W 9W2 CANADA  
p- 250-387-6513; f- 250-387-5360 plambert@rbml01.rbcm.gov.bc.ca

LANDEIRA FERNANDEZ, ANA MARIA  
CENT DE CIENC DA SAUDE, CIDADE UNIV  
DEPT BIOANIMICA MEDICA, BL E SL 38  
RIO DE JANEIRO, CEP, 21941-590 BRAZIL  
p- (5521) 270-1635; f- (5521) 270-8647  
landeira@server.biogmed.ufrj.br

LANE, DAVID J.W.  
NATIONAL UNIVERSITY OF SINGAPORE  
SCHOOL OF BIOLOGICAL SCIENCES  
LOWER KENT RIDGE ROAD  
119260 SINGAPORE  
p- 65-874-2964; f- 65-779-2486 sbslaned@nus.sg

LANE, N. GARY  
INDIANA UNIVERSITY  
DEPT GEOLOGICAL SCIENCES  
1005 EAST TENTH STREET  
BLOOMINGTON, IN 47405  
f- 812-855-7899 lane@indiana.edu

LANG, GUNTER  
NATIONAL UNIVERSITY SINGAPORE  
DEPARTMENT OF ZOOLOGY  
KENT RIDGE  
0511 SINGAPORE

LARES, MICHAEL  
UNIVERSITY OF SOUTH FLORIDA  
DEPARTMENT OF BIOLOGY  
TAMPA, FL 33620  
lares@chuma.cas.usf.edu

LARRAIN, ALBERTO P.  
UNIVERSIDAD DE CONCEPCION  
DEPARTAMENTO DE BIOLOGIA  
CASILLA 2407  
CONCEPCION, CHILE  
p- 56-234985; f- 56-240280 alarrain@halcon.dpi.udec.cl

LAWRENCE, JOHN M.  
UNIV OF SOUTH FLORIDA  
DEPARTMENT OF BIOLOGY  
4202 EAST FOWLER AVE, LIF 136  
TAMPA, FL 33620-5150  
p- 813-974-2549; f- 813-974-3263 lawr@chuma.cas.usf.edu

LAYOUS, YVES  
29 RUE PIERRE NICOLE  
PARIS, 75005 FRANCE

LE MENN, JEAN  
LAB PALEONTOLOGIE ET STRATIGRAPHIE  
DU PALEOZOIQUE -UFR SCIENCES  
BP809, 6 AV LE GORGEU  
BREST CEDEX, 29287 FRANCE  
p- 33-02-98-01-61-89; f- 33-02-98-01-66-20  
jean.le-menn@univ-brest.fr

LeCLAIR, ELIZABETH E.  
2024 CHESTNUT ST., APT. 24-D  
PHILADELPHIA, PA 19103

LECLERC, MICHAEL  
ORLEANS UNIVERSITY  
BIOLOGY DEPT, UER SCIENCES  
ORLEANS, 45045 FRANCE

LEELING, BEATRIX  
ZOOLOGISCHES INSTITUT & MUSEUM  
UNIVERSITAT HAMBURG  
MARTIN LUTHER KING PLATZ 3  
HAMBURG 13, GERMANY

LEIBSON, NINA L.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
f- 4232-310-900 faribm@visenet.marine.su

LEISMAN, JULIANNE  
FLORIDA INST OF TECHNOLOGY  
DEPT. OF BIOLOGICAL SCIENCES  
150 W. UNIVERSITY BLVD.  
MELBOURNE, FL 32901-6988

LEMBO, LUIZ  
UNICAMP  
DEPTO DE ZOOLOGIA - INST BIOLOGIA  
C.P. 6109  
CAMPINAS - SP, 13083-970 BRAZIL

LESSER, MICHAEL P.  
UNIVERSITY OF NEW HAMPSHIRE  
DEPT ZOOL & CENTER FOR MAR BIOL  
SPAULDING LIFE SCIENCE BUILDING  
DURHAM, NH 03824-3544  
p- 603-862-3442; f- 603-862-3784 mpl@christa.unh.edu

LESSIOS, HARILAOS A.  
SMITHSONIAN TROP RESEARCH INST  
UNIT 0948  
APO AA  
MIAMI, FL 34002-0948  
p- 507-228-4304; f- 507-228-0516 stri01.naos.lessiosh@ic.si.edu

LEVERONE, JAY R.  
MOTE MARINE LABORATORY  
1600 THOMPSON PARKWAY  
SARASOTA, FL 34234  
p- 813-388-4441; f- 813-388-4312

LEVIN, VALERY S.  
KAMCHATKA PACIFIC INST FISHERY  
& OCEANOGR, KAMCHATNIRO  
NABEREZHNYAYA, 18  
PETROPAVLOVSK-KAMCHATSKY, 683002 RUSSIA  
p- 415-222-59-55; f- 415-222-24-05 service@post.kamchatka.su

LEVINGS, C. D.  
PACIFIC ENVIRONMENT INSTITUTE  
4160 MARINE DRIVE  
WEST VANCOUVER, B.C., V7V1N6 CANADA

LEVITAN, DONALD R.  
FLORIDA STATE UNIVERSITY  
DEPT BIOLOGICAL SCIENCE, B-142  
TALLAHASSEE, FL 32306-2043  
p- 904-644-2524; f- 904-644-9829 levitan@irisl.sb.fsu.edu

LIAO, YULIN  
ACADEMIA SINICA  
INSTITUTE OF OCEANOLOGY  
7 NAN-HAI ROAD  
QINGDAO, 266071 PEOPLE'S REPUBLIC OF CHINA  
p- 532-2879062-2308; f- 86-532-2870882

LIBRARY  
HOPKINS MARINE STATION  
of STANFORD UNIVERSITY  
PACIFIC GROVE, CA 93950-3094

LIBRARY  
NATIONAL MARINE FISHERIES SERVICE  
W.F. THOMPSON MEMORIAL LIBRARY  
P.O. BOX 1638  
KODIAK, AK 99615

LIBRARY  
BIBLIOTHEEK NATUURLIJKE HISTOIRE  
NATIONAAL NATUURHISTORISCH MUSEUM  
P.O. BOX 9517  
2300 RA LEIDEN, THE NETHERLANDS

THE LIBRARY  
MANDAPAM REGIONAL CENTRE- CMFRI  
MARINE FISHERIES POST-623520  
MANDAPAM CAMP, RAMANATHAPURAM DIST  
TAMILNADU, INDIA

LIBRARY, NIWA  
P.O. BOX 14-901  
WELLINGTON, NEW ZEALAND  
p- +64 4 386-0300; f- +64 4 386-0574 libinfo.wn@niwa.cri.nz

LIBRARY, RSMAS  
UNIVERSITY OF MIAMI  
4600 RICKENBACKER CAUSEWAY  
MIAMI, FL 33149  
p- 305-361-4021; f- 305-361-9306 khale@rsmas.miami.edu

LIBRARY, THE GUNTHER  
GULF COAST RESEARCH LABORATORY  
PO BOX 7000  
703 EAST BEACH DRIVE  
OCEAN SPRINGS, MS 39566-7000

LIBRARY  
NATIONAL MUSEUMS OF KENYA  
PO BOX 40648  
NAIROBI, KENYA  
p-254-2-742161/4; f-254-2-741424; biodive@tt.gn.apc.org

LITVINOVA, NINA M.  
RUSSIAN ACADEMY OF SCIENCES  
INSTITUTE OF OCEANOLOGY  
23 KRASIKOVA  
MOSCOW, 117218 RUSSIA  
p- 129-21-18; f- (095) 124-59-83

LORDSON, JINBERT  
TRC OF CMFRI  
90 NORTH BEACH ROAD  
TUTICORIN  
TAMIL NADU, 628 001 INDIA  
p- 91-20102

LOVELY, ERIC C.  
UNIVERSITY OF NEW HAMPSHIRE  
DEPARTMENT OF ZOOLOGY  
SPAULDING LIFE SCIENCE BUILDING  
DURHAM, NH 03824-3544  
p- 603-743-4585 ecl@christa.unh.edu

LUBCHENCO, JANE  
OREGON STATE UNIVERSITY  
DEPARTMENT OF ZOOLOGY  
CORDLEY 3029  
CORVALLIS, OR 97331  
lubchenj@bcc.orst.edu

LUCAS, JOHN S.  
JAMES COOK UNIVERSITY  
SCHOOL OF BIOLOGICAL SCIENCES  
TOWNSVILLE, QLD 4811, AUSTRALIA  
p- 77-814412; f- 77-251570 john.lucas@jcu.edu.au

LUNNY, ALICIA  
FLORIDA ATLANTIC UNIVERSITY  
LIBRARY REFERENCES  
777 GLADES ROAD  
BOCA RATON, FL 33431

LUTZEN, JORGEN  
UNIVERSITY OF COPENHAGEN  
INST OF COMPARATIVE ANATOMY  
UNIVERSITETSPARKEN 15  
2100 COPENHAGEN, DENMARK

MACURDA, JR., D.BRADFORD  
THE ENERGISTS  
10260 WESTHEIMER, SUITE 300  
HOUSTON, TX 77042  
p- 713-781-6881; f- 713-781-2998 energist@hti.net

MACZYNSKA, STEFANIA S.  
UL.CZERNIAKOWSKA 20 M 121  
WARSZAWA, 00-714 POLAND

MAGNIEZ, PIERRE  
MUSEUM D'HISTOIRE NATURELLE  
LAB BIOL.INVERTEBRES MARINES  
55 RUE DE BUFFON  
PARIS 75005, FRANCE

MAH, CHRISTOPHER L.  
CALIFORNIA ACADEMY OF SCIENCES  
DEPT INVERT ZOOL & GEOLOGY  
GOLDEN GATE PARK  
SAN FRANCISCO, CA 94118-4599  
p- 415-750-7093; f- 415-750-7090 cmah@cas.calacademy.org

MAHARAVO, JEAN  
CENTRE NATIONAL DE RECHERCHES  
D'OCEANOGRAPHIQUES - DIRECTOR  
B.P. 68  
(207) NOSY-BE, MADAGASCAR  
p- 19.261.8.613.73

MAIER, MARTA S.  
UNIV BUENOS AIRES, FAC CIENC EX Y NAT  
DEPTO QUIMICA ORGANICA  
PABELLON 2, CID UNIVERSITARIA  
BUENOS AIRES 1428, ARGENTINA  
p- 00541-782-0529; f- 00541-782-0529 maier@quimor.qo.fcen.uba.ar

MAJEROWICZ, EUGENE  
4449 PRESIDIO DRIVE  
LOS ANGELES, CA 90008

MAKRA, ATHENA  
UNIVERSITY COLLEGE GALWAY  
MARTIN RYAN INSTITUTE  
DEPT OF ZOOLOGY  
GALWAY, IRELAND  
p- 091-524411 ext 3302; f- 091-525005  
athena.makra@seaweed.ucg.ie

MALLEFET, JEROME C.  
UNIV. CATHOLIQUE DE LOUVAIN  
LAB DE PHYSIOLOGIE ANIMALE  
CLAUDE BERNARD-5 PL CROIX DU SUD  
LOUVAIN-LA-NEUVE B-1348, BELGIUM  
p- 32-10-47-87-50; f- 32-10-47-34-77 mallefet@bani.ucl.ac.be

MANCHENKO, GENNADY P.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
f- 4232-310-900 faribm@visenet.marine.su

MANNI, RICCARDO  
UNIV DEGLI STUDI DI ROMA "LA SAPIENZA"  
DIP. DI SCIENZE DELLA TERRA  
PIAZZALE ALDO MORO, 5  
ROME, 00185 ITALY  
p- 0039-6-49914315; f- 0039-6-4454729

MANNIFIELD, KAY  
TRINITY COLLEGE  
DEPT GEOLOGY, MUSEUM BUILDING  
DUBLIN 2, REPUBLIC OF IRELAND  
p- 353-1-608-2010; f- 353-1-671-2821 manniflk@tcd.ie

MAPLES, CHRISTOPHER G.  
KANSAS GEOLOGICAL SURVEY  
1930 CONSTANT AVE.  
LAWRENCE, KS 66047  
maples@msmail.kgs.ukans.edu

MARAN, ALEKSANDRA A.  
NATURAL HISTORY MUSEUM  
NJEGOSEVA 51  
BELGRADE, 11000 YUGOSLAVIA  
p- 381-11-444-22-39; f- 381-11-444-22-63

MARCOS-DIEGO, CONCEPCION  
UNIVERSIDAD DE MURCIA  
DEPTO DE ECOLOGIA, FAC DE BIOLOGIA  
MURCIA, 30100 SPAIN  
p- 34-68-833000; f- 34-68-363963

MARKOV, ALEXANDER V.  
PALEONTOLOGICAL INSTITUTE  
OF RUSSIAN ACADEMY OF SCIENCES  
PROFSOYUZNAYA STR. 123  
MOSCOW, 117647 RUSSIA  
p- +7 095 952 4006; f- +7 095 954 3815 pbul@paleo.msk.su

MARQUES, V.M.A.M.  
DEPT ZOOLOGIA & ANTROPLOGIA  
FACULDADE CIENCIAS DE LISBOA  
RUA DA ESCOLA POLITECNICA  
1200 LISBON, PORTUGAL

MARSH, LOISETTE M.  
WESTERN AUSTRALIAN MUSEUM  
FRANCIS STREET  
PERTH, W.A. 6000, AUSTRALIA  
p- 61-9-328-4411; f- 61-9-328-8686

MARSHALL, CHARLES  
UNIVERSITY OF CALIFORNIA  
DEPT EARTH AND PLANETARY SCIENCES  
LOS ANGELES, CA 90024  
iasherm@mvs.oac.ucla.edu

MARTIN, R.ERIK  
APPLIED BIOLOGY, INC.  
PO BOX 974  
JENSEN BEACH, FL 34958

MARTIN, RICHARD B.  
CSIRO MARINE LABORATORIES  
DIVISION OF FISHERIES  
GPO BOX 1538, HOBART  
TASMANIA 7001, AUSTRALIA  
p- 61-2-325-222; f- 61-2-325-000 martin@ml.csiro.au

MARTINEZ, PRISCILLA C.  
CHARLES DARWIN RESEARCH STATION  
P.O. BOX 17-01-3891  
QUITTO, ECUADOR  
p- 593-5-526-147; f- 593-4-564-636 martinez@ecdarwin.org.ec

MASCARENHAS, BERNARDO JOSE DE A.  
MUSEU NACIONAL  
DPTO DE INVERTEBRADOS  
QUINTA DA BOA VISTA S/No  
SAO CRISTOVAO, RJ, 20940-040 BRAZIL

MASSIN, CLAUDE  
INST ROYAL SCIENCES NATURELLES DE BELGIQUE  
RUE VAUTIER 29  
1040 BRUXELLES, BELGIUM  
p- 322.627.43.47; f- 322.646.44.33 massin@kbinirsnb.be

MATERIA-ROWLAND, CHRISTINE J.  
COASTAL AND MARINE PROGRAM  
DEPT ENVIRONMENT & LAND MANAGEMENT  
GPO BOX 510E  
HOBART, TASMANIA, 7001 AUSTRALIA  
p- +61-02-33-3742; f- +61-02-34-8730 chrstr@delm.tas.gov.au

MATERIA-ROWLAND, CHRISTINE J.  
MARINE & COASTAL RESEARCH TASMANIA  
PO BOX 188  
SANDY BAY, TASMANIA, 7006 AUSTRALIA  
p- +61-3-6267-4302; f- +61-3-6267-4133 mcrt@tassie.net.au

MATTOS-SEGOVIA, ELIO  
UNIVERSIDAD ARTURO PRAT  
DEPARTAMENTO DE INGENIERIA  
CASILLA 121  
IQUIQUE, CHILE  
p- 56-057-447070; f- 56-057-441009

MATURO, JR., FRANK  
UNIVERSITY OF FLORIDA  
ZOOLOGY DEPARTMENT  
GAINESVILLE, FL 32611

MAUBON, ROGER M.  
CHEMIN DE LA SOURCE  
CIDEX 429B  
ST. ISMIER, 38330 FRANCE  
p- 0476-52-05-66

MAYTIA, LIC SUSANA  
MUSEO NACIONAL DE HISTORIA NAT  
CC399  
MONTEVIDEO, URUGUAY

McBRIDE, SUSAN  
UCCE SEA GRANT  
SUITE 4  
#2 COMMERCIAL STREET  
EUREKA, CA 95501  
p- 707-443-8369; f- 707-445-3901 scmcbride@ucdavis.edu

McCARTHY, DANIEL  
FLORIDA STATE UNIVERSITY  
DEPARTMENT OF BIOLOGY  
TALLAHASSEE, FL 32304

McCLINTOCK, JAMES B.  
UNIV OF ALABAMA AT BIRMINGHAM  
DEPT OF BIOLOGY  
UAB STATION  
BIRMINGHAM, AL 35294-1170  
p- 205-975-2525; f- 205-975-6097 biof004@uabdp.dpo.uab.edu

McEDWARD, LARRY  
UNIVERSITY OF FLORIDA  
DEPARTMENT OF ZOOLOGY  
223 BARTRAM HALL  
GAINESVILLE, FL 32611  
p- 904-932-8738; f- 904-392-3704 lmced@zoo.ufl.edu

McGEE, PAULA E.  
MILWAUKEE PUBLIC MUSEUM  
DEPT. OF GEOLOGY  
800 WEST WELLS STREET  
MILWAUKEE, WI 53233-1478

McINTOSH, GEORGE CLAY  
ROCHESTER MUSEUM & SCIENCE CTR  
657 EAST AVE.  
PO BOX 1480  
ROCHESTER, NY 14620

McKENZIE, J. DOUGLAS  
SCOTTISH ASSOC. MARINE SCIENCE  
DUNSTAFNAGE MARINE LABORATORY  
P.O. BOX 3  
OBAN, ARGYLL, PA34 4AD SCOTLAND, U.K.  
p- 44-1-63-156-2244; f- 44-1-63-156-5518 dmck@wpo.nerc.ac.uk

McKINNEY, MICHAEL  
UNIVERSITY OF TENNESSEE  
DEPT. GEOLOGY  
KNOXVILLE, TN 37966

McKNIGHT, DONALD  
N.Z. OCEANOGRAPHIC INSTITUTE  
P.O. BOX 14901  
KILBIRNIE, WELLINGTON, NEW ZEALAND  
p- 4-386-1189; f- 4-386-2153

McLELLAND, JERRY A.  
GULF COAST RESEARCH LABORATORY  
INVERTEBRATE ZOOLOGY SECTION  
P.O. BOX 7000  
OCEAN SPRINGS, MS 39566  
p- 601-374-5550; f- 601-374-5559 jmclella@medea.gp.usm.edu

McNAMARA, KENNETH J.  
WESTERN AUSTRALIAN MUSEUM  
FRANCIS STREET  
PERTH, W.A. 6000, AUSTRALIA  
p- 61-9-427-2755; f- 61-9-328-4411 mcnamk@muswa.dialix.oz.au

MEDEIROS-BERGEN, DOT E.  
WOODS HOLE OCEANOGRAPHIC INSTITUTE  
BIGELOW 402, MS #9  
WOODS HOLE, MA 02543  
p- 508-289-3545; f- 508-457-2132 dem@tides.whoi.edu

MEIJER, LAURENT  
CNRS  
STATION BIOLOGIQUE  
B.P. 74  
29682 ROSCOFF CEDEX, FRANCE  
p- 33 (0) 2.98.29.23.39; f- 33 (0) 2.98.29.23.42 meijer@sb-roscoff.fr

MELIKOV, OKTAI HAMZA  
AZERBAIJAN STATE OIL ACADEMY  
AZERBAIJAN INSTITUTE OF OIL & CHEMISTRY  
AZADLIG AVE 20  
BAKU, 370010 AZERBAIJAN  
f- (994)-12-930 806

MENGE, BRUCE A.  
OREGON STATE UNIVERSITY  
DEPARTMENT OF ZOOLOGY  
CORVALLIS, OR 97331  
f- 503-737-0501 mengeb@bcc.orst.edu

MERCIER, ANNIE  
SOC D'EXPLORATION & DE VALORISATION  
DE L'ENVIRONNEMENT (SEVE)  
90 NOTRE-DAME EST  
RIMOUSKI, QUEBEC, G5L 1Z6 CANADA  
p- 418-724-1770; f- 418-724-1842 annie-mercier@uqar.quebec.ca

MESSING, CHARLES G.  
NOVA SOUTHEASTERN UNIVERSITY  
OCEANOGRAPHIC CENTER  
8000 NORTH OCEAN DRIVE  
DANIA, FL 33004  
p- 954-920-1909; f- 954-921-7764 messingc@ocean.nova.edu

MEYER, CHRISTIAN A.  
NATURALMUSEUM SOLOTHURN  
KLOSTERPLATZ 2  
CH-4500 SOLOTHURN, SWITZERLAND  
p- 0041-32-622-7021; f- 0041-32-622-7052  
100256.2743@compuserve.com

MEYER, DAVID L.  
UNIVERSITY OF CINCINNATI  
DEPARTMENT OF GEOLOGY  
PO BOX 210013  
CINCINNATI, OH 45221-0013  
p- 512-556-6931 meyer@ucbeh.san.uc.edu

MINER, BEN  
24992 VIA DEL RIO  
LAKE FOREST, CA 92630  
cowfishes@aol.com

MINTZ, LEIGH W.  
CALIFORNIA STATE UNIV, HAYWARD  
CURRICULUM & ACADEMIC PROGRAMS, WA859  
25800 CARLOS BEE BLVD  
HAYWARD, CA 94542-3011  
p- 510-885-3716; f- 510-885-4777 lmintz@csuhayward.edu



MIRONOV, ALEXANDER  
USSR ACADEMY OF SCIENCES  
INSTITUTE OF OCEANOLOGY  
KRASIKOVA 23  
MOSCOW, 117218 RUSSIA  
p- 095-129-21-18; f- 095-124-59-83 mironov@bentos.ioras.msk.ru

MITROVIC-PETROVIC, JOVANKA R.  
FACULTY OF MINING & GEOLOGY  
KAMENICKA 6, PO BOX 227  
11000 BEOGRAD, YUGOSLAVIA  
p- (011) 632-166; f- (011) 335-539

MLADENOV, PHILIP V.  
UNIVERSITY OF OTAGO  
DEPARTMENT OF MARINE SCIENCE  
PO BOX 56  
DUNEDIN, NEW ZEALAND  
p- 64-3-479-8306; f- 64-3-479-8336  
philip.mladenov@stonebow.otago.ac.nz

MOCRETSOVA, NINA D.  
PACIFIC RESEARCH INSTITUTE  
OF FISHERIES AND OCEANOGRAPHY  
4, SHEVCHENKO ALLEY  
VLADIVOSTOK, 690600 RUSSIA

MOELLER, CHRIS  
UNIV OF ALABAMA AT BIRMINGHAM  
DEPT BIOLOGY, CAMPBELL HALL  
1300 UNIVERSITY BOULEVARD  
BIRMINGHAM, AL 35294-1170  
biof036@uabdp.dpo.uab.edu

MONTAGUE, CHRISTOPHER  
608 SOUTH HEIGHTS  
LA MARQUE, TX 77568  
montague@mbian.utmb.edu

MOOI, RICHARD  
CALIFORNIA ACADEMY OF SCIENCES  
INVERTEBRATE ZOOLOGY  
GOLDEN GATE PARK  
SAN FRANCISCO, CA 94118  
p- 415-750-7086; f- 415-750-7090 rmooi@cas.calacademy.org

MOONEY, ROBERT C.  
UNIVERSITY OF BRITISH COLUMBIA  
CTR APPLIED CONSERV BIOL, FAC FORESTRY  
270-2357 MAIN MALL  
VANCOUVER, B.C., V6T 1Z4 CANADA  
p- 604-228-2390; f- 604-822-5410 rmooney@unixg.ubc.ca

MOORE, ABIGAIL M.  
22, RUE DE L'EGLISE  
RIMBOVAL, 62990 FRANCE  
p- 00.33.321.861187; f- 00.33.321.864378  
100451.1537@compuserve.com

MOORE, ANDREW  
GATTY MARINE LAB  
EAST SANDS  
ST. ANDREWS, FIFE, SCOTLAND, U.K.

MORGAN, KATHERINE  
UNIV OF FLORIDA  
DEPT OF ZOOLOGY  
PO BOX 118525  
GAINESVILLE, FL 32611-8525  
p- 352-392-1107 kmorgan@zoo.ufl.edu

MORISHITA, AKIRA  
NAGOYA UNIVERSITY  
DEPARTMENT OF EARTH SCIENCES  
CHIKUSA  
NAGOYA, JAPAN

MORRILL, JOHN B.  
NEW COLLEGE-USF  
DIVISION OF NATURAL SCIENCES  
5700 NORTH TAMiami TRAIL  
SARASOTA, FL 34243-2197  
p- 941-359-4370; f- 941-359-4396

MOTOKAWA, TATSUO  
TOKYO INSTITUTE OF TECHNOLOGY  
FACULTY OF SCIENCE, DEPT BIOL  
2-12-1 O-OKAYAMA, MEGURO-KU  
TOKYO 152, JAPAN  
p- 81-3-5734-2659; f- 81-3-5734-2946 tmotokaw@bio.titech.ac.jp

MOUCHATY, SUZETTE  
UNIVERSITY OF LUND  
DEPT OF GENETICS, c/o ULFUR ARNASON  
SOLVEGATAN 29  
LUND S 22362, SWEDEN  
suzette@bio.tamu.eduur.arnason@gen.lu.se

MOURA-BRITTO, MAURO DE  
RUA RIO GRANDE DO SUL  
907/63-B  
CURITIBA, PR, 80610-100 BRAZIL  
p- 041-2438484

MU, A.T.  
INSTITUTE OF GEOLOGY  
AND PALEONTOLOGY  
ACADEMIA SINICA  
NANJING, PEOPLE'S REPUBLIC OF CHINA

MU, EN-ZHI  
INSTITUTE OF GEOLOGY  
AND PALEONTOLOGY  
ACADEMIA SINICA  
NANJING, PEOPLE'S REPUBLIC OF CHINA

MUKAI, HIROSHI  
HOKKAIDO UNIVERSITY  
AKKESHI MARINE BIOLOGICAL STA  
AKKESHI  
HOKKAIDO 088-11, JAPAN  
p- 0153-52-2056; f- 0153-52-2042

MUNAR-BERNAT, JAIME  
C/O JOSE ALEMANY  
VICH 6 1-3  
E-07010 PALMA DE MALLORCA  
BALEARIC ISLANDS, SPAIN  
p- 292009

MUNK, ERIC J.  
ALASKA FISHERIES SCIENCE CENTR  
KODIAK INVESTIGATIONS  
P.O. BOX 1638  
KODIAK, AK 99615-1638  
p- 907-487-5961; f- 907-487-5960 emunk@afsc.noaa.gov

MUSEUM, NATURAL HISTORY  
AQUISITIONS SECTION  
DEPT. OF LIBRARY SERVICES  
CROMWELL ROAD  
LONDON SW7 5BD, ENGLAND, U.K.

NAGAHAMA, YOSHITAKA  
NATIONAL INSTITUTE BASIC BIOL  
LAB OF REPRODUCTIVE BIOLOGY  
OKAZAKI 444, JAPAN

NAIDENKO, TAMARA K.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
p- 4232-311-143; f- 4232-310-900 tazibm@visenet.iasnet.com

NAKAMURA, RAYMOND K.  
VANCOUVER AQUARIUM  
P.O. BOX 3232  
VANCOUVER, B.C., V6B 3X8 CANADA  
p- (604)-685-3364; f- (604)-631-2529  
nakamur@vancouver-aquarium.org

NAKANO, EIZO  
IWASAKIDAI 2-706  
NISSHIN, AICHI 470-01, JAPAN  
p- 81-5617-2-4673; f- 81-5617-2-4673

NATEEWATNANA, ANUWAT  
PHUKET MARINE BIOL. CENTER  
P.O. BOX 60  
PHUKET 83000, THAILAND

NEBELSICK, JAMES H.  
INSTITUT GEOL. PALAEONTOLOGY  
UNIVERSITAT TUBINGEN  
SIGWARTSTR. 10  
TUBINGEN, D-72076 GERMANY  
p- 49-70-71-29-75-46; f- 49-70-71-94-90-40  
nebelsick@uni-tuebingen.de

NEILL, BRUCE J.  
LEWIS AND CLARK COLLEGE  
BIOLOGY DEPARTMENT  
0615 SW PALATINE HILL ROAD  
PORTLAND, OR 97219-7899  
p- 503-768-7502; f- 503-768-7658 bneill@lclark.edu

NEIRA, RAUL  
UNIVERSIDAD DE VALLE  
DEPARTAMENTO DE BIOLOGIA  
P.O. BOX 26513  
CALI, COLOMBIA  
rneira@biologia.univalle.edu.co

NEMOTO, SHIN-ICHI  
OCHANOMIZU UNIVERSITY  
TATEYAMA MARINE LABORATORY  
KOH-YATSU, UMI-NO-HOSHI  
TATEYAMA, CHIBA 294-03, JAPAN

NEPOTE, ANA CLAUDIA  
LOS PINOS #460, FRACC. LOS PINOS  
C.P. 45120  
ZAPOPAN, JALISCO, MEXICO  
p- 813-06-93 cnepote@maiz.cucba.udg.mx

NESTLER, HELMUT  
GEOLOG.-PALEONTOL. INSTITUT  
UNIVERSITAT GRIEFSWALD  
FREIDRICH-LUDWIG-JAHN STR 17A  
GRIEFSWALD, D-17489 GERMANY  
p- 03834-77271

NEUMANN, CHRISTIAN  
FREIEN UNIVERSITAT BERLIN  
INSTITUT FUR PALAONTOLOGIE  
MALTESERSTR. 74-100, HAUS D  
BERLIN, D-12249 GERMANY  
p- +49 30 779 2284; f- +49 30 776 2070

NICHOLS, DAVID  
UNIVERSITY OF EXETER  
HATHERLY LABORATORIES  
16 STRATHAM DRIVE  
EXETER, EX4 4PD ENGLAND, U.K.  
p- 01392.254463; f- 01392.263700 d.nichols@exeter.ac.uk

NICOSIA, UMBERTO  
UNIV DEGLI STUDI DI ROMA "LA SAPIENZA"  
DIP. DI SCIENZE DELLA TERRA  
PIAZZALE ALDO MORO, 5  
ROME, 00185 ITALY  
p- 0039-6-49914800; f- 0039-6-4454729

NIESEN, THOMAS  
SAN FRANCISCO STATE UNIVERSITY  
DEPT MARINE BIOLOGY, DIV. BIOL  
1600 HOLLOWAY AVE.  
SAN FRANCISCO, CA 94019  
p- 415-338-6387; f- 415-338-2295 tniesen@sfsu.edu

NISHIHARA, MORITAKA  
TOHOKU UNIVERSITY  
FACULTY OF SCIENCE  
BIOLOGICAL INSTITUTE  
SENDAI 980-77, JAPAN  
p- (81) 22-217-6681; f- (081) 22-217-6686  
j23067@cctu.cc.tohoku.ac.jp

NOJIMA, SATOSHI  
KYUSHU UNIVERSITY  
AMAKUSA MARINE BIOLOGICAL LAB.  
TOMIOKA, REIHOKU-CHO, AMAKUSA  
KUMAMOTO-KEN 863-25, JAPAN  
p- +81-969-35-0003; f- +81-969-35-2413  
satosca@mbox.nc.kyushu-u.ac.jp

NORRIS, DANIEL R.  
UNIVERSITY OF GUAM  
MARINE LABORATORY, UOG STATION  
MANGILAO, GM 96923  
p- 671-472-3002; f- 671-472-3002 dnorris@uog.pacific.edu

O'CONNOR, BRENDAN D.  
AQUA-FACT INTERNATIONAL  
12 KILKERRIN PARK  
LIOSBAUN, GALWAY, IRELAND  
p- 353-91-756812; f- 353-91-756888

O'HARA, TIMOTHY D.  
MUSEUM OF VICTORIA  
DEPT. OF INVERTEBRATE ZOOLOGY  
SWANSTON WALK  
MELBOURNE, VICTORIA, 3000 AUSTRALIA  
p- 613-9284-0206 tohara@pioneer.mov.vic.gov.au

O'LOUGHLIN, P. MARK  
95 BOND STREET  
IVANHOE 3079, AUSTRALIA  
p- 61-3-9-499-7245; f- 61-3-9-499-7122

O'NEILL, PATRICIA  
UNIVERSITY OF WEST. AUSTRALIA  
DEPARTMENT OF ZOOLOGY  
NEDLANDS, W.A. 6000, AUSTRALIA

OGURO, CHITARU  
TOYAMA UNIVERSITY  
DEPARTMENT OF BIOLOGY  
TOYAMA 930, JAPAN

OHTA, SUGURU  
UNIVERSITY OF TOKYO  
OCEAN RESEARCH INSTITUTE  
15-1, 1-CHOME, MINAMIDAI  
NAKANO-KU, TOKYO 164, JAPAN  
p-(+81)3-5351-6471; f- (+81) 3-5351-6471 sohta@ori.u-tokyo.ac.jp

OJEDA, F. PATRICIO  
PONT UNIV CATOLICA DE CHILE  
DEPARTAMENTO DE ECOLOGIA  
CASILLA 114-D  
SANTIAGO, CHILE  
p- 56-2-686-2729 ; f- 56-2-222-5515 pojeda@genes.bio.puc.cl

OJI, TATSUO  
UNIVERSITY OF TOKYO  
GEOLOGICAL INSTITUTE  
7-3-1 HONGO  
TOKYO 113, JAPAN  
p- 81-33-812-2111 ext 4506; f- 81-33-815-9490  
oji@geol.s.u-tokyo.ac.jp

OKADA, MINORU  
SCIENCE EDUCATION INST OSAKA PREF  
KARITA 4-CHOME  
SUMIYOSHI-KU  
OSAKA 558, JAPAN

OLAVE, SERGIO  
INSTITUTO DE FOMENTO PESQUERO  
CASILLA 78  
CASTRO, CHILE

OLSZEWSKA-NEJBERT, DANUTA  
WARSAW UNIVERSITY  
INSTITUTE OF GEOLOGY  
AL. ZWIRKI I WIGURY 93  
WARSZAWA, 02-089 POLAND  
p- 22-20-51 INT.39; f- 48-22-22-02-48 danuoisz@albit.geo.uw.edu.pl

OLVER, JANE  
LANCE'S COTTAGE  
PARKGATE ROAD  
NEWDIGATE  
SURREY, RH5 5DY ENGLAND, U.K.  
p- 01306 631368

ORLER, PARICIA MABEL  
CADIC CC.92 USHUAIA  
TIERRA DEL FUEGO, ARGENTINA  
postmaster@liarau.1000.ar

OTSU, INES  
INST INVESTIGACIONES OCEANOLOG  
UNIVERSIDAD DE CHILE  
CASILLA 1240  
ANTOFAGASTA, CHILE

PABIAN, ROGER K.  
UNIVERSITY OF NEBRASKA  
CONSERVATION & SURVEY DIVISION  
P.O. BOX 880517  
LINCOLN, NE 68588-0517  
p- 402-472-7564; f- 402-472-2410 rpabian@unlinfo.unl.edu

PAGETT, RICHARD M.  
HUNTERSBROOK HOUSE  
HOGGS LANE, PURTON  
WILSHIRE, SN5 9HQ ENGLAND U.K.  
p- 01793-771867; f- 01793-772663 drpagett@emt.telme.com

PAINE, ROBERT T.  
UNIVERSITY OF WASHINGTON  
DEPARTMENT OF ZOOLOGY  
SEATTLE, WA 98195

PALUMBI, STEVE  
HARVARD UNIVERSITY  
PROF, DEPT ORGANISMIC & EVOLUTIONARY BIOL  
BIOLABS, 16 DIVINITY AVE  
CAMBRIDGE, MA 02173  
p- 617-496-8633; f- 617-496-5854 spalumbi@oeb.harvard.edu

PARDO, ROBERTO A.  
UNIVERSIDAD DEL VALLE  
DEPARTAMENTO DE BIOLOGIA  
P.O. BOX 26513  
CALLI, COLOMBIA  
p- 57-2-3393243; f- 57-2-5580150 ropardo@hypatia.univalle.edu.co

PARMA, SARA GRACIELA  
CIUDAD UNIVERSITARIA. PAB II  
DEPTO DE CIENCIAS GEOLOGICAS  
FACULTAD DE CS. EX. Y NAT.  
BUENOS AIRES, 1428 ARGENTINA  
p- 781-8213; f- 781-8213 sagrapa@tango.fcen.uba.ar

PARSLEY, RONALD L.  
TULANE UNIVERSITY  
DEPARTMENT OF GEOLOGY  
NEW ORLEANS, LA 70118  
p- 504-862-3191; f- 504-865-5199 parsley@mailhost.tcs.tulane.edu

PASTOR, XAVIER  
LAB OCEANOGRÁFICO DE BALEARES  
MUELLE DE PELAIRES S/N  
PALMA DE MALLORCA  
BALEARIC ISLANDS, SPAIN

PAUL, C.R.C.  
LIVERPOOL UNIVERSITY  
DEPARTMENT OF EARTH SCIENCES  
BROWNLOW STREET  
LIVERPOOL, L69 3BX ENGLAND, U.K.  
p- +151 794 5181; f- +151 794 5170 crep@liv.ac.uk

PAULS, SHEILA MARQUES  
UNIVERSIDAD CENTRAL VENEZUELA  
INSTITUTO DE ZOOLOGIA TROPICAL  
APARTADO 47058  
CARACAS 1041-A, VENEZUELA  
p- 582-605-2303; f- 582-605-2204 spauls@reacciun.ve

PAWSON, DAVID L.  
SMITHSONIAN INSTITUTION  
NAT MUSEUM OF NATURAL HISTORY  
ROOM W321, MAIL STOP 163  
WASHINGTON, DC 20560  
p- 202-786-2127; f- 202-357-3043 pawsond@nmnh.si.edu

PEARCE, CHRISTOPHER M.  
UNIVERSITY OF DALHOUSIE  
DEPARTMENT OGF BIOLOGY  
HALIFAX, N.S., B3H 4J1 CANADA

PEARSE, JOHN S.  
UNIV CALIFORNIA, SANTA CRUZ  
INSTITUTE OF MARINE SCIENCES  
SANTA CRUZ, CA 95064  
p- 408-459-2455; f- 408-459-4882 pearse@darwin.ucsc.edu

PENCHASZADEH, PABLO E.  
UNIV. SIMON BOLIVAR, INTECMAR  
APARTADO 80659  
CARACAS, VENEZUELA  
p- 58-2-906-3052; f- 58-2-906-3064 ppenchas@shaddam.usb.re

PENNINGTON, J. TIMOTHY  
MBARI  
7700 SANDHOLDT ROAD, P.O. BOX 628  
MOSS LANDING, CA 95039  
p- 408-647-3715; f- 408-649-8587 peti@wave.mbari.org

PEREZ-RUZAF, ANGEL  
UNIVERSIDAD DE MURCIA  
DEPARTAMENTO DE ECOLOGIA  
FACULTAD DE BIOLOGIA  
MURCIA, 30100 SPAIN  
p- 34-68-833000; f- 34-68-363963 angelpr@fcu.um.es

PETR, VACLAV  
CHARLES UNIVERSITY  
ZOOLOGICAL LIBRARY, FAC SCIENCE  
VINICNA 7  
128 44 PRAHA 2, CZECH REPUBLIC

PHILIPPE, MICHEL  
MUSEUM D'HISTOIRE NATURELLE  
28, BD DES BELGES  
LYON, 69006 FRANCE  
p- 72.69.05.00; f- 78.94.62.25

PIEPENBURG, DIETER  
INSTITUTE FOR POLAR ECOLOGY  
UNIVERSITAET KIEL  
WISCHHOFSTR. 1-3, GEBAUDE 12  
KIEL, D-24148 GERMANY  
p- +49-431-600-12664; f- +49-431-600-1210 dpiepenburg@ipoe.de

PIESSE, C. C.  
NIWA, LIBRARY  
P.O. BOX 14-901, KILBIRNIE  
WELLINGTON, NEW ZEALAND  
p- 64-4 386-0300; f- 64-4 386-2153 pousse@greta.niwa.cri.nz

PIKE, ARLENE J.  
DALLAS MUSEUM OF NAT HIST  
P.O. BOX 150349  
DALLAS, TX 75315

PINELA, JEAN E.  
UNIVERSIDAD AUSTRAL DE CHILE  
INSTITUTO DE ZOOLOGIA  
CASILLA 567  
VALDIVIA, CHILE

PODOLSKY, ROBERT D.  
HOPKINS MARINE STATION  
100 OCEANVIEW BLVD  
PACIFIC GROVE, CA 93950  
p- 408-655-6238; f- 408-375-0795; podolsky@leland.stanford.edu

POMORY, CHRISTOPHER  
UNIVERSITY OF SOUTH FLORIDA  
DEPARTMENT OF BIOLOGY  
TAMPA, FL 33620

PORETZKAJA, E. S.  
V-34, 1 LINE, 10 APRTM. 21  
LENINGRAD, 199034 RUSSIA

PORTELL, ROGER W.  
FLORIDA MUSEUM OF NATURAL HISTORY  
DEPT NATURAL SCIENCES, UNIV FLORIDA  
P.O. BOX 117800  
GAINESVILLE, FL 32611-7800  
p- 352-338-0075; f- 352-846-0287 portell@flmnh.ufl.edu

PRESTEDGE, GEOFFREY K.  
16 GEEVES CRESCENT  
MIDWAY POINT  
TASMANIA 7171, AUSTRALIA

PROKOP, RUDOLF JAN  
NATIONAL MUSEUM, DEPT. PALAEONTOLOGY  
VACLAVSKE NAM. 68  
115 79 PRAHA 1, CZECH REPUBLIC  
p- 42-2-24497262; f- 42-2-24226488 ais@nm.anet.cz

PROPP, MIKHAIL V.  
INSTITUTE OF MARINE BIOLOGY  
RUSSIAN ACAD. SCI.  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
p- 423-231-11-49; f- 423-231-09-00 faribm@visenet.iasnet.com

PUTCHAKARN, SUMAITT  
BURAPHA UNIVERSITY  
INSTITUTE OF MARINE SCIENCE  
BANGSAEN, CHONBURI, 20131 THAILAND  
p- 66-38-391671; f- 66-38-391674

RAHAMAN, ABDUL ABDUL  
SRI VASAVI COLLEGE  
PROFESSOR OF ZOOLOGY  
ERODE-G38 31B, INDIA

RAJAKUMAR, C. P.  
UNIVERSITY COLLEGE  
DEPT OF ZOOLOGY  
PALAYAM, TRIVANDRUM  
KERALA STATE, 695 034 INDIA  
p- 04-6515-2503

RAYMOND, ALAN M.  
UNIVERSITY OF ST. ANDREWS  
GATTY MARINE LAB  
ST. ANDREWS  
FIFE KY168LB, SCOTLAND, U.K.

RECEIPT, SERIALS  
BLACKER-WOOD LIBRARY OF BIOLOGY  
McGILL UNIV, REDPATH LIBRARY BLDG  
3459 McTAVISH STREET  
MONTREAL, QUEBEC, H3A 1Y1 CANADA  
f- 514-398-8231

REGIS, MARIE-BERTHE  
FACUL SCI & TECH DE ST. JEROME  
(CERAM) CASE 341  
AVE ESCADRILLE NIEMEN-NORMANDIE  
MARSEILLE CEDEX 20, 13397 FRANCE  
p- 91.28.80.99; f- 91.28.80.30

REGNAULT, SERGE  
MUSEUM D'HISTOIRE NATURELLE, 12  
RUE VOLTAIRE  
NANTES, 44000 FRANCE

REGNELL, GERHARD  
GEOLOGISKA INSTITUTIONEN  
SOLVEGATAN 13  
S-223 62 LUND, SWEDEN  
p- 46-121-475; f- 46-121-477

REICH, MIKE  
GEOLOGISCH-PALAONTOLOGISCHES INSTITUT  
E.-M.-ARNDT-UNIVERSITÄT GREIFSWALD  
F.-L.-JAHN-STRASSE 17a  
GREIFSWALD, D-17489 GERMANY  
p- 49-3834-864552; f- 49-3834-864572  
reich-mi@gryps6.rz.uni-greifswald.de

REMPALA, ERIN  
248 EAST 23RD ST,  
APT #10  
NEW YORK, NY 10010  
p- 212-696-4113 erempala@tvguide.com

REY, DANIEL  
VILA I VILA 17 79  
BARCELONA, 08004 SPAIN  
p- (343) 451-9052; f- (343) 451-9087

RHO, BOON JO  
EWA WOMENS UNIVERSITY  
DIR OF NATURAL HISTORY MUSEUM  
SEOUL 120, KOREA

RICHMOND, MATT  
SCHOOL OF OCEAN SCIENCES  
MENAI BRIDGE  
ANGLESEY, LL59 5EY NORTH WALES, U.K.  
p- 44-1248-354557; f- 44-1248-354557

ROBEL, TOM  
1236 SE 86TH AVE  
PORTLAND, OR 97216  
cubeez@aol.com

ROBERTS, DAI  
THE QUEEN'S UNIVERSITY, BELFAST  
SCHOOL OF BIOLOGY AND BIOCHEM.  
BELFAST, BT9 7BL NORTHERN IRELAND, U.K.  
p- +1232 245133; f- +1232 236505

ROBINSON, SHAWN M.C.  
DEPT. FISHERIES AND OCEANS  
BIOLOGICAL STATION  
ST. ANDREWS, N.B., EOG 2XO CANADA  
p- 506-529-8854 ext. 5932; f- 506-529-5862  
robinson@wolves.sta.dfo.ca

ROCCATAGLIATA, ALEJANDRO J.  
UNIVERSIDAD DE BUENOS AIRES  
FACULTAD DE CIENCIAS EX. Y NAT  
PABELLON 2, CID UNIVERSITARIA  
BUENOS AIRES 1428, ARGENTINA  
p- 54-1-782-0529; f- 54-1-787-2696 alerki@quimor.qo.fcen.uba.ar

RODRIGUEZ, EVELYN  
INST. ZOOL. TROPICAL, FAC. DE CIENCIAS  
UNIV CENTRAL VENEZUELA, PASEO LOS ILUSTRE  
LOS CHAGUARAMOS, APDO. 47058  
CARACAS 1041-A, VENEZUELA  
p- 605-2208; f- 605-2136 fprovenz@strix.ciencs.ucv.ve

RODRIGUEZ, SEBASTIAN R.  
PONT. UNIV. CATOLICA DE CHILE  
DEPARTAMENTO DE ECOLOGIA  
CASILLA 114-D  
SANTIAGO, CHILE  
p- 56-2-686-2797; f- 56-2-222-5515 esrodrig@genes.bio.puc.cl

ROGERS-BENNETT, LAURA  
FRIDAY HARBOR LABS  
UNIVERSITY OF WASHINGTON  
620 UNIVERSITY ROAD  
FRIDAY HARBOR, WA 98250  
p- 360-378-2165; f- 206-543-1273 rogersb@hfl.washington.edu

ROMINAS-CASTRO, LILY  
NATIONAL INSTITUTE FISHERIES  
P.O. BOX 1306, ENSENADA  
BAJA CALIFORNIA, 22800 MEXICO  
p- 617-46085; f- 617-46135

ROSE, EDWARD P.F.  
ROYAL HOLLOWAY, UNIV OF LONDON  
DEPARTMENT OF GEOLOGY  
EGHAM  
SURREY, TW20 0EX ENGLAND, U.K.  
p- 44-1-78-444-3589; f- 44-1-78-447-1780 rose@sunl.gl.rhnc.ac.uk

ROTMAN CLARK, HELEN E.S.  
N.Z. OCEANOGRAPHIC INSTITUTE  
NIWAR  
PO BOX 14-901, KILBIRNIE  
WELLINGTON, NEW ZEALAND  
p- 4-386-3000; f- 4-386-0574

ROUX, MICHEL  
UNIV DE REIMS CHAMPAGNE-ARDENNE  
LAB DES SCIENCES DE LA TERRE  
2 ESPLANADE ROLAND GARROS  
REIMS, 51100 FRANCE  
p- 03-26-77-368; f- 03-26-77-36-94



ROWE, FRANK  
GOLDBROOK BOARDING KENNELS  
NUTTERY VALE, CROSS STREET  
HOXNE  
SUFFOLK, IP21 5BB ENGLAND, U.K.  
p- 01379-668-267; f- 01379-668-267

ROY, MICHAEL S.  
ZOO INST, UNIV COPENHAGEN  
DEPT POPULATION BIOLOGY  
UNIVERSITETSPARKEN 15  
COPENHAGEN, DK-2100 DENMARK  
p- +45-3532-1279; f- +45-3532-1300 Michael.S.Roy@pop.zi.ku.dk

ROZHN OV, SERGEI V.  
PALEONTOLOGICAL INSTITUTE  
RUSSIAN ACADEMY OF SCIENCES  
PROFSOYUSNAYA STR. 123  
V-321 MOSCOW, 117647 RUSSIA  
p- 7-095-952-40-06; f- 7-095-954-38-15 lenin33@paleo.msk.su

RUMRILL, STEVEN S.  
SOUTH SLOUGH NATIONAL ESTUARINE RESERVE  
P.O. BOX 5412  
CHARLESTON, OR 97420

RYABUSHKO, VITALY  
INSTITUTE OF BIOLOGY OF THE  
SOUTHERN SEAS, DEPT ANIMAL PHYSIOL.  
2 NAKHIMOV AVE.  
SEVASTOPOL, 335001 UKRAINE

SABA, MASAKI  
581-60 SAKURA-MACHI  
MATSUSAKA CITY, MIE PREF., JAPAN  
p- 0598-26-3642

SAHADEVAN, ASHA PAYIKAT  
TRC OF CMFRI  
90 NORTH BEACH ROAD  
TUTICORIN  
TAMIL NADU, 628001 INDIA

SANCHEZ, PATRICIO  
UNIVERSIDADE CATOLICA  
FACULTAD DE CIENC. BIOLOGICAS  
CASILLA 114-D  
SANTIAGO, CHILE

SANFORD, ERIC  
OREGON STATE UNIVERSITY  
DET. OF ZOOLOGY  
CORVALLIS, OR 97331  
p- 503-737-5359 sanforde@bcc.orst.edu

SANO, MINORU  
TOHOKU UNIVERSITY  
FAC AGRIC, DEPT APPLIED BIO-SCI  
1-1, TSUTSUMIDORI AMAMIYAMACHI  
SENDAI, JAPAN  
msano@bios.tohoku.ac.jp

SAPP, JANN  
YORK UNIVERSITY  
CHAIR, DEPT SCIENCE STUDIES  
4700 KEELE STREET  
NORTH YORK, ONTARIO, CANADA  
p- 416-736-5213 jsapp@um2.yorku.ca

SASTRY, DWADASI R.K.  
ANDAMAN AND NICOBAR REGIONAL STATION  
ZOOLOGICAL SURVEY OF INDIA, HADDO  
PORT BLAIR, 744102 INDIA

SATO, HIDE MI  
NAGANO UNIVERSITY  
FACULTY OF SOCIAL SCIENCE  
SHIMONOGO, UEDA,  
NAGANO 386-12, JAPAN

SAUER DE AVILA PIRES, TERESA C.  
CIUDADE UNIVERSITARIA  
DEPTO DE ZOOLOGICA/UFRJ  
ILHA DO FUND AO, CCS-SALA A1-117  
RIO DE JANEIRO, 21.941 BRAZIL

SCALLY, KEVIN  
CANTERBURY HEALTH LIMITED  
CHRISTCHURCH HOSP, DENTAL SERV  
P.O. BOX 1600  
CHRISTCHURCH, NEW ZEALAND  
p- 64-3640-250; f- 64-3640-246

SCHEIBLING, ROBERT E.  
UNIVERSITY OF DALHOUSIE  
DEPARTMENT OGF BIOLOGY  
HALIFAX, N.S., B3H 4J1 CANADA  
p- 902-494-3515; f- 902-494-3736 rescheib@ac.dal.ca

SCHELTEMA, RUDOLF S.  
WOODS HOLE OCEANOGRAPHIC INST.  
DEPARTMENT OF BIOLOGY  
WOODS HOLE, MA 02543  
p- 508-289-2337; f- 508-457-2169 rscheltema@whoi.edu

SCHINNER, G. O.  
INSTITUT FUR ZOOLOGIE  
UNIVERSITAT WIEN  
ALTHANSTRASSE 14  
VIENNA A-1090, AUSTRIA  
f- 222-313-36-778 schinner@zoo.univie.ac.at

SCHMINCKE, SABINE  
UNIV. WURZBURG  
PALAEONTOLOGISCHES INSTITUT  
PLEICHERWALL 1  
WURZBURG 8700, GERMANY

SCHOPPE, SABINE  
ViSCA-GTZ ECOLOGY PROGRAM  
VISAYAS STATE COLLEGE AGRICULTURE  
BAYBAY, LEYTE 6521-A, PHILIPPINES  
p- 0063-912-501-9921; f- 0063-912-500-1898  
ecovisca@mozcom.com

SCHROEDER, W.  
DAUPHIN ISLAND SEA LAB  
MAR ENVIRON SCI CONSORTIUM  
P.O. BOX 369-370  
DAUPHIN ISLAND, AL 36528

SCHUETZ, ALLEN W.  
JOHNS HOPKINS UNIVERSITY  
SCH HYGIENE & PUBLIC HEALTH  
615 N. WOLFE ST.  
BALTIMORE, MD 21205-2179  
p- 410-955-3117; f- 410-955-0792 aschuetz@phnet.sph.jhu.edu

SCHUMACHER, HELMUT  
UNIVERSITÄT ESSEN  
INST. FÜR ÖKOLOGIE  
POSTFACH 10 37 64  
ESSEN 1, D4300 GERMANY

SECTION, ACQUISITIONS  
THE NATURAL HISTORY MUSEUM  
DEPT LIBRARY & INFORMATION SERVICES  
CROMWELL ROAD  
LONDON, SW7 5BD ENGLAND  
gk@nhm.ac.uk

SEETO, JOHNSON  
MARINE STUDIES PROGRAMME  
THE UNIVERSITY OF SOUTH PACIFIC  
P.O. BOX 1168  
SUVA, FIJI  
p- (679) 313900; f- (679) 301490 seeto\_j@usp.ac.fj

SERAFY, D. KEITH  
LONG ISLAND UNIVERSITY  
DEPARTMENT OF BIOLOGY  
SOUTHAMPTON, LONG ISLAND, NY 11968  
p- 516-287-8408; f- 516-287-8419

SEVASTOPULO, GEORGE  
UNIVERSITY OF DUBLIN  
TRINITY COLLEGE  
DEPT OF GEOLOGY  
DUBLIN 2, IRELAND  
p- 353-1-608-2010; f- 353-1-671-2821 gsvstpul@tcd.ie

SEWELL, MARY  
UNIVERSITY SOUTHERN CALIFORNIA  
DEPT BIOLOGICAL SCIENCES  
LOS ANGELES, CA 90089-0371  
p- 213-740-5794; f- 213-740-8123 marys@bcf.usc.edu

SHEPHERD, SCORESBY A.  
S.A. RESEARCH AND DEVELOPMENT  
INSTITUTE (SARDI)  
P.O. BOX 120  
HENLEY BEACH, SA, 5022 AUSTRALIA  
p- 08-200-2427; f- 08-200-2482 shepherd.scoresby@pi.sa.gov.au

SHICK, MALCOLM J.  
UNIVERSITY OF MAINE  
DEPT BIOLOGICAL SCIENCES  
5751 MURRAY HALL  
ORONO, ME 04469-5751  
p- 207-581-2562; f- 207-581-2537 shick@maine.bitnet

SHIRAI, HIROKO  
NATIONAL INST FOR BASIC BIOLOG  
LAB OF REPRODUCTIVE BIOLOGY  
OKAZAKI, AICHI-KEN 444, JAPAN

SHIRLEY, THOMAS C.  
JUNEAU CENTER FOR FISHERIES &  
OCEAN SCIENCES, UAF  
11120 GLACIER HWY.  
JUNEAU, AK 99801  
p- 907-465-6449; f- 907-465-6447 jftcs@acad1.alaska.edu

SHLEPR, MICHAEL  
2679 YALTA ST., N.E.  
PALM BAY, FL 32905

SIBUET, MYRIAM  
IFREMER  
CENTRE DE BREST  
DRO/EP, BP 70  
PLOUZANE, 29280 FRANCE  
p- 33-02-9822-4303; f- 33-02-9822-4547 msibuet@ifremer.fr

SIDES, LIZ  
TRINITY COLLEGE  
ENVIRONMENTAL SCIENCE UNIT  
DUBLIN 2, IRELAND

SIEGEL, I. MYRA  
PO BOX 6202  
CAPE ELIZABETH, ME 04107-0002

SIMMS, MICHAEL J.  
CHELTENHAM & GLOUCESTER COLLEGE  
OF HIGHER EDUCATION  
DEPT GEOGRAPHY & GEOLOGY  
CHELTENHAM, GL50 4AZ ENGLAND, U.K.

SIMPSON, RODNEY D.  
UNIVERSITY OF NEW ENGLAND  
DEPARTMENT OF ZOOLOGY  
ARMIDALE NSW 2351, AUSTRALIA  
rsimpson@metz.une.edu.au

SINGLETARY, ROBERT L.  
UNIVERSITY OF BRIDGEPORT  
BRIDGEPORT, CT 06601-2449  
p- 203-576-4270; f- 203-576-4766 robert@cse.bridgeport.edu

SKOLD, MATTIAS  
KRISTINEBERG  
MARINE RESEARCH STATION  
FISKEBACKSKIL, 45034 SWEDEN  
p- +46 523 18502; f- +171 938 8925 m.skold@kmf.gu.se

SLATTERY, MARC  
UNIVERSITY OF MISSISSIPPI  
DEPT PHARMACOGNOSY  
SCHOOL OF PHARMACY  
UNIVERSITY, MS 38677  
p- 601-232-1053; f- 601-232-7026  
mslatter@sunset.backbone.olemiss.edu

SLOAN, NORMAN A.  
3734 RUTHERFORD CRESCENT  
NORTH VANCOUVER, BC, V7N 2C7 CANADA  
p- 604-990-0123; f- 604-990-0523

SMILEY, SCOTT  
DIRECTOR,  
FISHERY INDUSTRIAL TECHNOLOGY CENTER  
900 TRIDENT WAY  
KODIAK, AK 99615-7401  
p- 907-486-1500; f- 907-486-1540 fsts@aurora.alaska.edu

SMIRNOV, ALEXEI V.  
ZOOLOGICAL INSTITUTE  
ACADEMY OF SCIENCES  
UNIVERSITetskaya NAB., 1  
ST. PETERSBURG, 199034 RUSSIA  
p- 7-812-218-13-11; f- 7-812-218-29-41 sav@aster.zin.ras.spb.ru

SMIRNOV, IGOR S.  
ZOOLOGICAL INSTITUTE  
ACADEMY OF SCIENCES  
UNIVERSITETSKAYA NAB.,1  
ST. PETERSBURG, 199034 RUSSIA  
p- 7-812-218-13-11; f- 7-812-218-29-41 sav@aster.zin.ras.spb.ru

SMITH, ALBERT C.  
P.O. BOX 12153  
PANAMA CITY, FL 32401-9153  
p- 904-814-3423

SMITH, ANDREW B.  
THE NATURAL HISTORY MUSEUM  
DEPARTMENT OF PALAEONTOLOGY  
CROMWELL ROAD  
LONDON, SW7 5BD ENGLAND, U.K.  
p- 44-1-71-938-8925; f- 44-1-71-938-9277 abs@nhm.ac.uk

SOLIS-MARIN, FRANCISCO A.  
INST CIENC DEL MAR Y LIMNOL, UNAM  
LAB DE ECOLOGIA DE EQUINODERMOS  
APDO. POST. 70-305  
MEXICO, D.F., 04510 MEXICO  
p- 525-62258-02; f- 525-61607-48 fasolis@mar.icmyl.unam.mx

SOLOVJEV, ANDREY N.  
PALEONTOLOGICAL INSTITUTE  
RUSSIAN ACADEMY OF SCIENCES  
PROF SOYUSNAYA STR 123  
MOSCOW V-321, 117647 RUSSIA  
p- 7-095-952-40-06; f- 7-095-954-38-15 lenin33@paleo.msk.su

SONNENHOLZNER, JORGE I.  
P.O. BOX 599-000  
MIAMI, FL 33159  
p- 593(4) 401776; f- 593(4) 4011776 inp@inp.gov.ec

OR

SONNENHOLZNER, JORGE I.  
INSTITUTO NACIONAL DE PESCA  
LETAMENDI 102 Y LA RIA  
CASILLA (P.O. BOX) 09-04-15131  
GUAYAQUIL, ECUADOR  
p- (593-4) 401773; f- (593-4) 402304 inp@inp.gov.ec

SOUTH, G. ROBIN  
UNIVERSITY OF THE SOUTH PACIFIC  
INSTITUTE OF MARINE RESOURCES  
P.O. BOX 1168  
SUVA, FIJI

SPENCER, LARRY T.  
PLYMOUTH STATE COLLEGE  
DEPT NATURAL SCIENCE  
BOYD HALL  
PLYMOUTH, NH 03264  
p- 603-535-2322; f- 603-535-2723 lts@plymouth.edu

SPONER, RENATE  
ZOOLOG. INST., UNIVERSITY OF COPENHAGEN  
DEPT. POPULATION BIOLOGY  
UNIVERSITETSPARKEN 15  
DK-2100 COPENHAGEN, DENMARK  
p- +45-3532-1279; f- +45-3532-1300 michael.s.roy@pop.zi.ku.dk

SPRINKLE, JAMES  
UNIVERSITY OF TEXAS  
DEPT OF GEOLOGICAL SCIENCES  
AUSTIN, TX 78712  
p- 512-471-4264; f- 512-471-9425 echino@mail.utexas.edu

STAMPANATO, SALVATORE  
UNIVERSITE DE MONS-HAINAUT  
LAB DE BIOLOGIE MARINE  
19 AVE MAISTRIAU  
7000 MONS, BELGIUM  
p- 32-65-37-34-39; f- 32-65-37-34-34

STANCYK, STEPHEN E.  
UNIVERSITY OF SOUTH CAROLINA  
BELLE W. BARUCH INSTITUTE  
COLUMBIA, SC 29208  
p- 803-777-3944; f- 803-777-3935 stancyk@vm.sc.edu

STENKIL, MARGARETA  
NATURAL HISTORY MUSEUM  
BOX 406  
MALMO S20124, SWEDEN  
p- 46-4-0344414; f- 46-4-0344364

STEWART, BRIAN G.  
UNIVERSITY OF OTAGO  
DEPT MARINE SCIENCE  
P.O. BOX 56  
DUNEDIN, NEW ZEALAND  
p- 64-3-479-9038; f- 64-3-479-8336  
brian.stewart@stonebow.otago.ac.nz

STICKLE JR., WILLIAM B.  
LOUISIANA STATE UNIVERSITY  
ZOOLOGY & PHYSIOLOGY DEPT.  
BATON ROUGE, LA 70803  
p- 504-388-1739; f- 504-388-1763 zostic@lsuvm.sncc.lsu.edu

STOKES, ROBERT B.  
KINGSTON UNIVERSITY  
SCHOOL OF GEOLOGICAL SCIENCES  
KINGSTON UPON THAMES  
SURREY, KT1 2EE ENGLAND, U.K.

STORC, RICHARD  
SMETANOVA 380  
MNICHovice 251 64, CZECH REPUBLIC

STRATHMANN, RICHARD R.  
UNIVERSITY OF WASHINGTON  
FRIDAY HARBOR LABORATORIES  
620 UNIVERSITY ROAD  
FRIDAY HARBOR, WA 98250  
p- 360-378-2165; f- 206-543-1273 strath@fhl.washington.edu

STUBBS, T.  
UNIVERSITY OF ST. ANDREWS  
GATTY MARINE LAB  
FIFE, KY16 8L3 SCOTLAND, U.K.

STUMP, RICHARD J.  
2/5 CLEVELAND TCE  
TOWNSVILLE, QLD 4810, AUSTRALIA  
p- 077-216272; f- 077-216272 rstump@enternet.com.au

SUGIYAMA, MINAKO  
UNIV OF ALABAMA AT BIRMINGHAM  
DEPT BIOLOGY, CAMPBELL HALL  
1300 UNIVERSITY BOULEVARD  
BIRMINGHAM, AL 35294-1170  
minakos@norm.dpo.uab.edu

SULLIVAN, KATHLEEN M.  
UNIVERSITY MIAMI  
MARINE CONSERVATION SCIENCE  
DEPT OF BIOLOGY, BOX 249118  
CORAL GABLES, FL 33124

SUMIDA, PAULO Y.G.  
UNIVERSITY OF SOUTHAMPTON  
DEPT OF OCEANOGRAPHY  
SOUTHAMPTON, SO17 1BJ ENGLAND, U.K.  
p- (01703) 592490; f- (01703) 593059 ps3@soton.ac.uk

SUMRALL, COLIN D.  
UNIVERSITY OF TEXAS  
DEPARTMENT OF GEOLOGICAL SCI.  
AUSTIN, TX 78712

SUTER, SHERMAN J.  
SMITHSONIAN INSTITUTION  
NAT MUSEUM OF NATURAL HISTORY  
ROOM E121  
WASHINGTON, DC 20560  
p- 202-633-9322 suters@nmnh.si.edu

TABLADO, ALEJANDRO  
MUS. ARGENTINA CS. NATURALES  
"BERNARDINO RIVADAVIA"  
AVDA. ANGEL GALLARDO 470  
1405 BUENOS AIRES, ARGENTINA  
p- (54-1) 982-1154; f- (54-1) 982-5243 aletab@muanbe.gov.ar

TAHERA, QASEEM  
UNIVERSITY OF KARACHI  
MARINE REFERENCE COLLN & RESOURCE CENTRE  
KARACHI-75270, PAKISTAN  
p- 4961365; f- 0011-92-21-473270

TAJIKI, KEN-ICHI  
NIHON UNIVERSITY  
SCHOOL OF MEDICINE, OYAGUCHI  
DEPARTMENT OF BIOLOGY  
ITABASHI, TOKYO 173, JAPAN

TAKAHASHI, KEIICHI  
INTERNATIONAL CHRISTIAN  
UNIVERSITY, DEPT BIOL  
10-2, OSAWA 3-CHOME  
MITAKA-SHI, TOKYO 181, JAPAN  
p- (81) 422-33-3349; f- (81) 422-33-1449 keiichi@icu.ac.jp

TAKI, JYO  
HOKKAIDO ABASHIRI FISHERIES  
EXPERIMENTAL STATION  
ABASHIRI  
HOKKAIDO 099-31, JAPAN

TALBOT, TIFFANY  
NEWFOUND HARBOR MARINE INSTITUTE  
1300 BIG PINE AVE  
BIG PINE KEY, FL 33043  
dktalbot@aol.com

TAVARES, YARA A. G.  
CENTRO DE ESTUDOS DO MAR  
UNIVERSIDADE FEDERAL DO PARANA  
AV BEIRA MAR S/No. PONTAL DO SUL  
PARANAGUA, PARANA, 83255-000 BRAZIL  
p- (041) 4551333; f- (041) 4551105 ytavares@aica.cem.ufpr.br

TEGNER, MIA  
SCRIPPS INST OF OCEANOGRAPHY  
DEPARTMENT OF ZOOLOGY  
PKO A001  
LA JOLLA, CA 92093

TELFORD, MALCOLM  
UNIVERSITY OF TORONTO  
DEPARTMENT OF ZOOLOGY  
TORONTO, ONTARIO, M5S 1A1 CANADA  
p- 416-978-4843; f- 416-978-8532 telford@zoo.toronto.edu

TERRY, RICHARD E.  
UNIVERSITY OF CINCINNATI  
DEPARTMENT OF GEOLOGY  
CINCINNATI, OH 45221

THANDAR, AHMED S.  
UNIVERSITY OF DURBAN WESTVILLE  
DEPARTMENT OF ZOOLOGY  
P/BAG X54001  
DURBAN, 4000 SOUTH AFRICA  
p- 031-204-4120; f- 031-204-4790 thandar@pixie.udw.ac.za

THIERRY, JACQUES  
UNIVERSITE DE BOURGOGNE  
CENTRE DES SCIENCES DE LA TERRE  
6 BD GABRIEL  
DIJON, 21000 FRANCE  
p- 33-3-80-39-63-62; f- 33-3-80-39-63-87  
jthierry@satie.u.bourgogne.fr

THIES, JENNIFER  
7942 EMERALD BLUFF COURT  
HOUSTON, TX 77095

THOMASSIN, BERNARD  
CENT.D'OCEANOGRAPHIE MARSEILLE  
STATION MARINE D'ENDOUME  
H TRAVERSE LA BATTERIE LIONS  
13007 MARSEILLE, FRANCE

THORNDYKE, MICHAEL C.  
ROYAL HOLLOWAY, UNIV LONDON  
SCHOOL OF BIOLOGICAL SCIENCES  
EGHAM, SURREY, TW20 0EX ENGLAND, U.K.  
p- 01784-443773; f- 01784-470756 m.thorndyke@rhnc.ac.uk

THORSEN, MARIANNE S.  
UNIVERSITY OF COPENHAGEN  
MARINE BIOLOGICAL LABORATORY  
STRANDPROMENADEN 5  
DK-3000 HELSINGOR, DENMARK  
p- +45 49 213344; f- +45 49 261165 marilab@vm.uni-c.dk

TIEFENTHALER, LIESL  
SOUTHERN CALIFORNIA COASTAL  
WATER RESEARCH PROJECT  
7171 FENWICK LANE  
WESTMINSTER, CA 92683-5218  
lieslt@sccwrp.org

TOMINAGA, HIDEYUKI  
FUKUI PREFECTURAL FUKUI COMMERCIAL  
HIGH SCHOOL, 4-8-19 KENTOKU  
FUKUI CITY, FUKUI PREF, 910 JAPAN  
p- (+81) 776-24-5180; f- (+81) 776-24-5181  
kashipan@po.infosphere.or.jp

TOMMASI, LUIZ ROBERTO  
CIDADE UNIVERSITARIA, BUTANTA  
INSTITUTO OCEANOGRAFICO DA USP  
CAIXA POSTAL NO 9075  
SAO PAULO, S.P., 05508-900 BRAZIL  
tommasi@mandic.com.br

TRONCOSO, JUAN F.  
MUSEO HISTORIA NATURAL  
CASILLA 1054  
CONCEPCION, CHILE  
p- 310932-227311; f- 41-225796 jmtronco@fundch.cl

TURNER, RICHARD L.  
FLORIDA INST. OF TECHNOLOGY  
DEPT. OF BIOLOGICAL SCIENCES  
150 W. UNIVERSITY BLVD.  
MELBOURNE, FL 32901-6975  
p- 407-768-8000 ext.8196; f- 407-984-8461 rturner@fit.edu

TUTERA, PETER  
87 GRAHAM ROAD  
ROSANNA EAST, 3084 AUSTRALIA  
p- (03) 457-3448; f- (03) 480-5740

TYLER, PAUL A.  
SOUTHAMPTON OCEANOGRAPHY CENTRE  
DEPARTMENT OF OCEANOGRAPHY  
EUROPEAN WAY  
SOUTHAMPTON, SO14 3ZH ENGLAND, U.K.  
p- 1703-592557; f- 1703-593059 pat8@soc.soton.ac.uk

UBAGHS, GEORGES J.  
AVENUE BOIS LE COMTE 28  
4140 SPRIMONT, BELGIUM  
p- 04.68.64.41

UEHARA, TSUYOSHI  
UNIVERSITY OF THE RYUKYUS  
COLLEGE OF SCIENCE, DEPT BIOLOGY  
SENBARU 1, NISHIHARA-CHO  
OKINAWA 903-01, JAPAN  
p- 98-895-8897 ueharago@sci.u.ryukyu.ac.jp

URBINA, MEDARDO BURGOS  
UNIVERSIDAD DE CONCEPCION  
INSTITUTO CENTRAL DE BIOLOGIA  
CONCEPCION, CHILE

v.JUTERZENKA, KAREN  
INSTITUTE OF POLAR ECOLOGY  
WISCHHOFSTR. 1-3, GEB. 12  
KIEL, D-24148 GERMANY  
p- 49-431-7208768; f- 49-431-7208720 npf08@rz.uni-kiel.d400.de

VADAS, ROBERT L.  
UNIVERSITY OF MAINE  
DEPT PLANT BIOLOGY & PATHOLOGY  
5722 DEERING HALL  
ORONO, ME 04469-5722  
p- 207-581-2974; f- 207-581-2969 vadas@maine.maine.edu

VADET, ALAIN  
67 BLVD EURVIN  
BOULOGNE SUR MER, 62200 FRANCE  
p-03 21 31 87 13

VAIL, LYLE  
LIZARD ISLAND RESEARCH STATION  
PMB 37  
CAIRNS, QUEENSLAND 4871, 4870 AUSTRALIA  
p- 61-70-60-3977; f- 61-70-60-3977 lizard@amsg.austmus.gov.au

VALENTINCIC, TINE  
INSTITUTE OF BIOLOGY  
ASKERCEVA 12  
LJUBLJANA 61000, YUGOSLAVIA

VALENTINE, JOHN  
UNIVERSITY SOUTH ALABAMA  
DAUPHIN ISLAND SEA LAB  
BOX 369-370  
DAUPHIN ISLAND, AL 36528  
p- 334-361-7546; f- 334-361-7540 jvalenti@jaguar1.usouthal.edu

VAN DER HAM, RAYMOND W.J.M.  
PIET HEINSTRAT 6  
2628 RK DELFT, THE NETHERLANDS  
p- 015-2612611

VANDENSPIEGEL, DIDIER  
UNIVERSITE DE MONS-HAINAUT  
LAB DE BIOLOGIE MARINE  
19 AVE MAISTRIAU  
7000 MONS, BELGIUM  
p- 32-65-37-34-33; f- 32-65-37-34-34 biomarum@umh.ac.be

VARAKSINA, GALINA S.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
f- 4232-310-900 faribm@visenet.marine.su

VASKOVSKY, V. E.  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
f- 4232-310-900 vvas@imb.marine.su

VASQUEZ, JULIO  
UNIVERSIDAD CATOLICA DEL NORTE  
DEPARTAMENTO DE BIOLOGIA MARINA  
CASILLA 117  
COQUIMBO, CHILE  
p- 56-51-321-263; f- 56-51-311-287 jvasquez@socompa.cecun.ucn.cl

VEGA, JUAN TORRES  
INST CIENC DEL MAR Y LIMNOL, UNAM  
LAB DE ECOLOGIA DE EQUINODERMOS  
APDO. POST. 70-305  
MEXICO, D.F., 04510 MEXICO  
p- 525-62258-02

VELAQUE, MARC  
UNIV. DES SCIENCES DE LUMINY  
LABORATOIRE D'E.B.V.M.  
CASE 901-70 RT LEON LACHAMP  
13288 MARSEILLE CEDEX 9, FRANCE



VELARDE, RONALD  
CITY OF SAN DIEGO  
MARINE BIOLOGY LAB. M.S. 45  
4077 NORTH HARBOR DR.  
SAN DIEGO, CA 92101  
p- 619-692-4903; f- 619-692-4902

VENTURA, CARLOS RENATO R.  
UNIV FEDERAL RIO DE JANEIRO  
MUSEU NACIONAL, DEPT INVERTEBRADOS  
QUINTA DA BOA VISTA, SAO CRISTOVAO  
RIO DE JANEIRO, RJ, 20940-040 BRAZIL  
p- +55-21-568-1314; f- +55-21-568-1314 [ventura@acd.ufjr.br](mailto:ventura@acd.ufjr.br)

VIKTOROVSKAYA, GALINA I.  
TINRO  
PACIFIC RESEARCH FISHERY CENTER  
4 SHEVCHENKO ALLEY  
VLADIVOSTOK, 690600 RUSSIA  
p- 7-423-225-95-04; f- 7-423-225-77-83 [root@tinro.marine.su](mailto:root@tinro.marine.su)

VILLIER, LOIC  
RESERVE NATURELLE DE TOARCEN  
DISTRICT DE THOUARS, B.P. 183  
THOUARS CEDEX, 79103 FRANCE  
p- 05.49.96.14.01; f- 05.49.96.35.32

VISTISEN, BODIL K.  
UNIVERSITY OF COPENHAGEN  
MARINE BIOLOGICAL LABORATORY  
STRANDPROMENADEN 5  
DK-3000 HELSINGOR, DENMARK  
p- +45 49 213344; f- +45 49 261165

VIVIANI, CARLOS A.  
UNIVERSIDAD DE LA SERENA  
CAMPUS ENRIQUE MOLINA  
LA SERENA, CHILE

VON BRAND, ELISABETH  
UNIVERSIDAD CATOLICA DEL NORTE  
DEPTO BIOLOGIA MARINA  
CASILLA 117  
COQUIMBO, CHILE  
p- (56) 51-321263; f- (56) 51-311287  
[evonbran@socompa.cecun.ucn.cl](mailto:evonbran@socompa.cecun.ucn.cl)

VOOGT, PETER A.  
UNIVERSITY OF UTRECHT  
CHEMICAL ANIMAL PHYSIOLOGY  
5 PRINCETON PLEIN  
3584 CC UTRECHT, THE NETHERLANDS

WAKELEY, CAROLYN  
MEC ANALYTICAL SYSTEMS  
2433 IMPALA DRIVE  
CARLSBAD, CA 92008

WALENKAMP, J. H.C.  
RIJSMUSEUM VAN NAT. HISTORIE  
RAAMSTEEG 3  
LEIDEN 2311 PL, THE NETHERLANDS

WALKER, CHARLES W.  
UNIVERSITY OF NEW HAMPSHIRE  
DEPARTMENT OF ZOOLOGY  
DURHAM, NH 03824  
[cwwalker@christa.unh.edu](mailto:cwwalker@christa.unh.edu)

WARREN, ANDERS H.  
NATURHISTORISKA RIKSMUSEET  
SEKTIONEN FOR EVERTEBRATZOOLOGI  
BOX 50007, S-104 05  
STOCKHOLM 50, SWEDEN  
p- 46-8-6664086; f- 46-8-6664125 [ev-anders@nrm.se](mailto:ev-anders@nrm.se)

WASSON, KRISTINA  
UNIV ALABAMA, BIRMINGHAM  
BIOLOGY DEPT, UAB STATION  
1300 UNIVERISTY BLVD  
BIRMINGHAM, AL 35294-1170  
p- 205-934-8313; f- 205-975-6097 [biof028@uabdp.dpo.uab.edu](mailto:biof028@uabdp.dpo.uab.edu)

WATERS, JOHNNY A.  
WEST GEORGIA COLLEGE  
DEPARTMENT OF GEOLOGY  
CARROLLTON, GA 30118  
[jwaters@uga.cc.uga.edu](mailto:jwaters@uga.cc.uga.edu)

WATTS, STEPHEN A.  
UNIV OF ALABAMA AT BIRMINGHAM  
DEPARTMENT OF BIOLOGY  
UAB STATION  
BIRMINGHAM, AL 35294-1170  
p- 205-934-8308; f- 205-975-6097 [biof015@uabdp.dpo.uab.edu](mailto:biof015@uabdp.dpo.uab.edu)

WEBER, WALTER  
ZOOLOG. INSTITUTE, ANIMAL PHYSIO  
UNIVERSITY OF COLOGNE  
15 COLOGNE 41  
WEYERTAL 119, GERMANY

WEBSTER, GARY D.  
WASHINGTON STATE UNIVERSITY  
DEPARTMENT OF GEOLOGY  
PHYSICAL SCIENCE 1228  
PULLMAN, WA 99164-2812  
p- 509-335-4369; f- 509-335-7816 [webster@wsu.edu](mailto:webster@wsu.edu)

WELSCH, ULRICH  
ANATOMISCHE ANSTALT  
UNIVERSITAT MUNCHEN  
PETTENKOFERSTRASSE 11  
MUNCHEN, 80336 GERMANY  
p- +49 89 5160 4821; f- +49 089 5160 4897

WHITE, CHRIS  
NOVA UNIV OCEANOGRAPHIC CENTER  
8000 NORTH OCEAN DRIVE  
DANIA, FL 33004  
p- 954-722-1731; f- 305-947-8559 [whitec@ocean.nova.edu](mailto:whitec@ocean.nova.edu)

WIEDENMEYER, W.  
INSTITUT FUR MEERESKUNDE  
ABT. FISCHEREIBIOLOGIE  
DUSTERNBROOKER WEG 20  
KIEL, D-24105 GERMANY

WILKIE, IAIN C.  
GLASGOW CALEDONIAN UNIV.  
DEPT OF BIOLOGICAL SCIENCES  
COWCADDENS ROAD  
GLASGOW, G4 0BA SCOTLAND, U.K.  
p- 0141-331-3207; f- 0141-331-3208 [i.wilkie@uk.ac.gcal](mailto:i.wilkie@uk.ac.gcal)

WILLCOX, MARK S.  
LIVERPOOL JOHN MOORES UNIV  
BIOLOGICAL & EARTH SCIENCES  
BYROM STREET  
LIVERPOOL, L3 3AF ENGLAND, U.K.  
p- 00 44 151-231-2026; f- 00 44 151-298-1014  
m.willcox@livjm.ac.uk

WOODLEY, JEREMY D.  
DISCOVERY BAY MARINE  
LABORATORY,  
P.O. BOX 35  
DISCOVERY BAY, JAMAICA, WEST INDIES  
woodley@mcmaster.ca

WORHEIDE, GERT  
INSTITUT UND MUSEUM  
FÜR GEOLOGIE & PALAONTOLOGIE  
GOLDSCHMIDTSTR 3  
GÖTTINGEN, D-37077 GERMANY  
p- 49-551-397945; f- 49-551-397996 gwoerhe@gwdg.de

WRAY, GREGORY A.  
SUNY AT STONY BROOK  
DEPT. OF ECOLOGY & EVOLUTION  
STONY BROOK, NY 11794-5245  
p- 516-632-8506; f- 516-632-7626 gwrays@life.bio.sunysb.edu

YAKOVLEV, SERGHEY N.  
INSTITUTE OF MARINE BIOLOGY  
RUSSIAN ACAD SCI  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
p- 7-423-231-09-06; f- 7-423-231-09-00 faribm@visenet.iasnet.com

YAKOVLEV, YURI  
INSTITUTE OF MARINE BIOLOGY  
PALCHEVSKY 17  
VLADIVOSTOK, 690041 RUSSIA  
f- 4232-310-900 faribm@visenet.marine.su

YAMAGUCHI, MASASHI  
UNIVERSITY OF THE RYUKYUS  
DEPARTMENT OF MARINE SCIENCES  
SENBARU 1, NISHIHARA  
OKINAWA 903-01, JAPAN  
p- +81-98-895-8561 ; f- +81-98-895-2414 coral@sci.u-ryukyu.ac.jp

YANAGISAWA, TOMIO  
OGASAWARA RESEARCH STATION  
TOKYO METROPOLITAN UNIV.  
CHICHI-JIMA, OGASAWARA  
TOKYO 100-21, JAPAN  
p- 04998-2-2981; f- 04998-2-2981

YOSHIZATO, KATSUTOSHI  
HIROSHIMA UNIVERSITY  
DEPT OF BIOL SCIENCE  
1-3-1, KAGAMIYAMA  
HIGASHI-HIROSHIMA, 724, JAPAN  
p- 81-824-24-7440; f- 81-824-24-1492  
kyoshiz@ue.ipc.hiroshima-u.ac.jp

YOUNG, CRAIG  
HARBOR BRANCH OCEANOGR INST  
DEPT. LARVAL ECOLOGY  
5600 OLD DEXIE HIGHWAY  
FORT PIERCE, FL 34946  
p- 407-465-2400 ext 303; f- 407-488-0757 youngc@hboi.edu

ZAGHBIB-TURKI, D.  
DEPT. SCIENCES DE LA TERRE  
FACULTE DES SCIENCES DE TUNIS  
CAMPUS UNIVERSITAIRE  
TUNIS 1060, TUNISIA  
p- 216-1-512-600; f- 216-1-500-666

ZAVODNIK, DUSAN V.  
CENTER MARINE RESEARCH ROVINJ  
"RUDJER BOSKOVIC" INSTITUTE  
ROVINJ, HR-52210 CROATIA  
p- 385-52-811-544; f- 385-52-813-496

ZEIDLER, WOLFGANG  
SOUTH AUSTRALIAN MUSEUM  
NORTH TERRACE  
ADELAIDE, S.A. 5000, AUSTRALIA  
p- +618 2077491; f- +618 2077222 samuseum@ozemail.com.au

ZITT, JIRI  
CZECH ACADEMY OF SCIENCES  
GEOLOGICAL INSTITUTE  
ROZVOJOVA 135  
165 00 PRAGUE 6, CZECH REPUBLIC  
p- 24-31-14-21; f- 24-31-15-78 zitt@gli.cas.cz

\*\*\*\*\* CURRENT RESEARCH \*\*\*\*\*

ALI, M.S.M. - study of some Jurassic and Cretaceous echinoids of Sinai, Egypt.

ALLEN, J.A. - deep-sea benthos of the Atlantic.

ALLISON, W.R. - I am a coral reef ecologist, and so am generally interested in Echinoderms. I have however, a particular interest in all facets of the life and times of Culcita spp. I am looking into the taxonomy and ecology of the species in Maldives, with special interest in its feeding ecology; completing research on reef survey methods and the status of Maldivian reefs.

ALVA, V. - trophic ecology of benthonic suspension organisms.

ANDACHT, T.M. - studying the mechanism of dorsoventral polarity disruption and inhibition of fertilization envelope elevation by nickel chloride in the sea urchin embryo, Lytechinus variegatus.

ANDERSEN, A. - study of chemically induced predator responses on Strongylocentrotus drobachiensis.

ANDERSON, R.C. - an escape action of the asteroid Poraniopsis inflata in response to other sea stars.

ARCHER, J.E. - initiating Ph.D. research on the potential of the sea cucumber fishery in New Zealand. Focus is on the culture of larvae for hatchery on-growing and reef augmentation. Includes investigation into harvesting, sustainability, reproductive manipulation of adults, hatchery treatment of larvae, the development of artificial reef structures to 'optimise' settlement and on-growing in wild, and the adaptation of present technology used in invertebrate culture.

AUSICH, W.I.- early radiation and phylogeny of crinoids; crinoid classification; crinoid taphonomy; Lower Mississippian crinoid macroevolution.

BALSER, E.J. - development of the gonad in holothuroid echinoderms; function of the larval kidney in hemichordates and echinoderms.

BARTSCH, I. - parasites in and on brittle stars.

BASCH, L.V. - environmental effects on sea urchin (Strongylocentrotus) reproduction and development; influences of larval abundance and condition on settlement and recruitment of sea urchins; echinoderm larval nutrition; polar echinoid growth and secondary production; kelp forest ecology.

BAUER, J.C. - comparative study of the reproductive biology of the tropical echinoids Diadema antillarum and Lytechinus variegatus after exposure to internal bacterial disease (for a PhD degree from King's College London and Harbor Branch Oceanographic Institution).

BAUMILLER, T.K. - ecology and functional morphology of recent isocrinids; taphonomy of arms and stalks of articulates and advanced cladids vs. other Paleozoic taxa; diversity of Permian and Triassic crinoids and effects of the P/T extinction; patterns of turnover and extinction of Paleozoic crinoids; ecology of Seirocrinus; borings in Paleozoic pelmatozoans.

BAZHIN, A. - monitoring the condition of sea urchin populations (Strongylocentrotus droebachiensis, S. polyacanthus) along the Kamchatka peninsula shore.

BEAVER, H.H. - structure and function of blastoid summit plates.

BECKER, J. - marine invertebrates of Brazilian oceanic islands, including especially echinoderms.

BEDDINGFIELD, S.D. - interrelationships between different species within discrete communities; environmental influences on the population dynamics and life history characteristics of organisms; ecology of flora and fauna of marine benthic ecosystems; reproductive and nutritional biology of marine invertebrates.

BEGBIE, K.M. - studies on the hyponeural nervous system of the brittlestar, Ophiura ophiura.

BELL, B.M. - Edrioasteroids.

BENEJAM DE, C. - occurrence of brooding Amphiodia sp. in Monterey Bay (California).

BENTLEY, A.C. - biology of the sand dollar, Echinodiscus bisperforatus along the southeastern coast of South Africa, encompassing growth, reproduction, genetics, larval biology etc.

BERENTS, P.B. - collection manager of marine invertebrates at the Australian Museum.

BERGEN, M. - The Southern Bight Pilot Project - a survey of soft bottom benthic communities between 10 & 200 m between Point Conception, California and the Mexican border.

BERTRAM, D.F. - evolution and ecology of modes of development in echinoids.

BILLETT, D. - environmental impact on the deep sea; taxonomy of the genus Mesothuria (Holothurioidea).

BIRENHEIDE, R. - morphology, physiology and biomechanics of crinoids.

BIRKELAND, C.E. - coral reef management.

BIRYUKOVA, I.V. - chemoreception; chemosensory systems and its morphogenesis in the marine invertebrates.

BLAKE, D.B. - Cretaceous asteroids of Texas; Ordovician stelleroids; stelleroids of Seymour Island.

BLUHM, H. - deep-sea holothurians in the Peru Basin.

BOCKELIE, J.F. - Heliocrinitids (cystoids) from Scandanavia and the Bathic; taxonomy, functional morphology and palaeoecology.

BORZONE, C.A. - Matinhos sandy beach replenishment and its impact on the benthic macrofaunal nearshore community; echinoderms of Parana's coastal waters, Brazil.

BOSCH, I.M. - UV-B effects on embryos and larvae of Antarctic echinoderms during springtime ozone depletion.

BOUDOURESQUE, C.F. - effect of the invasive introduced alga Caulerpa taxifolia on Paracentrotus lividus: population dynamics and diet; long term changes of Paracentrotus lividus (sea urchin) populations in a protected area and a non-protected area.

BOURGOIN, A. - studying the possibility of commercializing the green sea urchin Strongylocentrotus drobachiensis on the northeastern coast of New Brunswick.

BREGMAN, Y.E. - working with the sea urchin Strongylocentrotus intermedius to determine size-age structure, growth, recruitment and longevity at the Russian eastern coast of Japan Sea and the same with Strongylocentrotus polyacanthus in Avacha Bay, Kamchatka); additionally we are testing some artificial foods to improve the commercial value of Strongylocentrotus intermedius.

BRETON, G. - Mesozoic and Cenozoic asteroid systematics, taphonomy, biostratigraphy and evolution.

BREY, T. - polar echinoderm population dynamics; Antarctic ophiuroid growth; Antarctic asteroid food; Antarctic holothuroid metabolism.

BROWER, J.C. - taxonomy, functional morphology, paleoecology, ontogeny and phylogeny of Ordovician crinozoans and blastozoans from the northern midcontinent of North America.

BUITRON-SANCHEZ, B.E. - Cenozoic echinoderms (Stelleroidea and echinoidea) from Baja California, Mexico.

BURCH, B.L. - comparison of gut contents of echinoids to sand where they live, just for forams this next year, and only for Mamala Bay and windward Oahu stations where there is Chaetodiadema pallidum. Seeing as there seem to be about 800 species of forams at the depths where this echinoid has been found, that will take me some time, although we are moderately finished with the forams of those depths. Probably will do only those of three stations, two in Mamala Bay on the leeward side and the one windward side station. As some of these forams dissolve in the gut, we must also do some gut pH analysis in those regions too. I hope that these pH ranges are similar to those in other echinoids, namely similar to that of found in water where they live.

BUSSARAWIT, S. - taxonomic study of echinoderms from the Andaman Sea, west coast of Thailand.

BYRNE, M. - life history evolution, echinoderm reproduction and development, ophiuroid functional morphology, echinoderm fisheries.

CALTAGIRONE, A. - sea urchin aquaculture.



CAMERON, R.A. - the specification of late cell types in sea urchin embryogenesis; development of the adult rudiment in larvae; genetic structure of sea urchin populations; a gene trap strategy to identify new upstream control regions for spatially restricted gene expression.

CAMPBELL, A. - sea urchin population dynamics ecology and fisheries.

CAMPBELL, A.C. - zoogeography of Indian Ocean echinoderms.

CAMPBELL, D.B. - feeding behavior of Asterias.

CANDIA-CARNEVAL, M.D. - crinoid arm regeneration; structure, physiology and biomechanics of complex musculo-skeletal systems (echinoid lantern, ophiuroid masticatory apparatus).

CHAO, S.-M. - population dynamics of the shallow-water holothurians of Taiwan; systematics of the echinoderms from Taiwan.

CHEN, C.-P. - ontogenesis of skeletal plate patterns, gonad, and gonapophyses in the progenitive Sinaechinocyamus mai.

COLON-JONES, D.E. - rearing Diadema larvae; rearing coral larvae; studying the sediment regime on Biscayne National Park reefs; examining calcification rates of corals.

CONAND, C. - sea cucumber fisheries; sea urchin bioerosion (Echinometra different types); coral reef echinoderms of La Reunion (Indian Ocean); sea cucumber reproductive biology in the Indo-west Ocean (La Reunion).

CREASER, E.P. - management of green sea urchin resources of State of Maine.

CRUMP, R.G. - asteroid development and ecology.

CUTRESS, B.M. - deep sea Holothuroidea (Echinodermata) of Puerto Rico.

DAFNI, J.B. - echinoid growth.

DAVOULT, D. - studies on ecology and functioning (fluxes of carbon and nitrogen at the water-sediment interface) of coastal benthic communities in the English Channel and the North Sea, with special reference to a dominant species, the ophiuroid Ophiothrix fragilis (Abildgaard); studies of interactions between physics (hydrodynamism) and biology (behaviour) for nutrition (suspension-feeding) and recruitment (settlement of larvae on adults).

DAYTON, P.K. - benthic ecology.

DE RIDDER, C. - symbioses between bacteria (mainly sulfur-oxidizing bacteria) and spatangoids- reproductive biology.

DE WIT, W.M.J.- fossil echinoderms in fluviatile and ice-age deposits of Holland.

DEARBORN, J.H. - functional morphology of ophiuroid tube feet; identification of Gulf of Maine and Antarctic ophiuroids and crinoids from collections on hand.

DEBENHAM, P. - population genetics of the red sea urchin Strongylocentrotus franciscanus.

DEVIN, M.G. - benthic species diversity of the Bahamian slope (depth 300 m to 900 m) - the fauna is dominated by echinoderms, particularly echinoids.

DIEHL, W.J. - effects of environmental stress on multilocus heterozygosity-growth relationships in invertebrates.

DOBSON, W.E. - population biology of Ophiura sarsi on continental slope off North Carolina; use of skeletal growth bands in ophiuroid ossicles as biological markers for sublethal predation and population ecology experiments.

DOLMATOV, I.Y. - mechanisms of regeneration, their formation and changes in individual development of marine invertebrates.

DOMINGUEZ, P. - working on early echinoderms, especially Cambrian and Ordovician Pelmatozoans and Carpoids from Spain.

DONOVAN, S.K. - Pseudocidaris from the Cretaceous of the Caribbean region; British Silurian crinoids, particularly those of the late Llandovery Kilbride Formation, Co. Galway and Co. Mayo, western Ireland; late Cenozoic crinoids and echinoids of the Antillean region, particularly Barbados, Carriacou, Cayman and Jamaica.

DRUMMOND, A.E. - intra and interspecific agnostic behaviour in echinoids; wave action and consequences for E. mathaei, S. variolaris, and D. savignyi.

EBLE, G.J. - evolutionary dynamics in disasteroids, holasteroids and spatangoids; post-metamorphic spatangoid development; phylogeny of disasteroids, early holasteroids and early spatangoids.

ELISEIKINA, M.G. - mechanisms of regeneration, their formation and changes in individual development of marine invertebrates.

ELLERS, O.W. - growth of sand dollar teeth; catch collagen.

EMLET, R.B. - functional morphology of echinoderm larval evolution of echinoid life histories and development.

ETNIER, S. - comatulid crinoids.

ETTENSohn, F.R. - systematics, paleoecology and functional morphology of the pelagic crinoid Saccocoma; paleoecology of an Ordovician Ectenocrinus garden.

EVDOKIMOV, V.V. - research of reproductive process of sea urchins; reproduction and development of marine invertebrates; influence of monochromatic light on the sea urchins reproductive process.

FAY, R.O. - Ovachita Belt bibliography.

FEDER, H.M. - the deep benthic environment in Port Valdez, Prince William Sound, Alaska; the feeding biology of the sea star Pycnopodia helianthoides in Prince William Sound, Alaska; the deep benthos in Prince William sound 16 months after the Exxon Valdez oil spill; the macrofauna (infauna and

epifauna--which includes large numbers of sea-star species) in the southeastern Chukchi Sea.

FERAL, J.-P. - structure of habitat and dispersal strategies; effects of developmental modes on genetic structure and evolutionary processes (mainly in echinoids - annelids and molluscs also used).

FERGUSON, J.C. - madreporite functions and water volume relationships in echinoderms - currently on echinoids and holothuroids.

FERNANDEZ, C. - growth, nutrition and biochemical composition of sea urchin Paracentrotus lividus in rearing fed with different types of artificial food.

FLAMMANG, P. - adhesive systems of echinoderm podia; ultrastructure, biochemistry of the adhesive and deadhesive substance, and adhesive force measurements.

FOLLOSCO, M.P. - artificial culture of economically important sea cucumber.

FORET, T.W. - regeneration rates of Luidia in the field and the energetics of regenerative development; have begun thesis examining the prevalence of subcuticular bacteria in Gulf Coast (Florida) asteroids.

FOSTER, M.W. - Ordovician echinoderms from western Virginia; Atlantic Ocean brachiopods; Antarctic and subAntarctic brachiopods; paleobiology of Pennsylvanian invertebrates in Illinois.

FOX, D.J. - analysis of articulation in the arms of Ophiocoma echinata and Ophiocoma wendti.

FRANKEL, E. - coral reef lagoon sedimentation; coastal lakes, N.S.W.; volcanic ash - Mediterranean Sea; tectonics - eastern Mediterranean sea (ODP160).

FREEMAN, S.M. - impact and population dynamics of seastar predation on sublittoral communities. In particular, Astropecten irregularis on soft-bottom communities and Asterias rubens on commercial mussel beds, off the coast of Anglesea, North Wales; the relationship between the sea star Astropecten irregularis and its commensal polyniid Acholoe astercola.

FUJITA, T. - studying the growth of echinoderms in the lab of John Gage in Oban, Scotland until January 1998.

FUKUYAMA, A.K. - looking at recovery of intertidal invertebrates in Prince William Sound, Alaska following the 1989 Exxon Valdez oil spill and am particularly interested in molluscan and echinoderm assemblages and the contrast in recovery patterns between areas that were treated with hot-water, high pressure treatment with areas that were oiled and untreated.

GAGE, J.D. - deep-sea biology: shelf-edge benthic fluxes, and sediment community dynamics; deep-sea brittle star growth, spatial distribution and demographic modelling.

GAGNON, J.-M. - bioturbation by and foraging behaviour of deepwater echinoderms: observations in mesocosms.

- GALLEMI, J. - Cretaceous echinoids (Tethyan - worldwide); systematics, biostratigraphy and palaeoecology.
- GEBRUK, A.V. - deep-sea holothurians (order Elasipodida and, in part, Fam. Synallactidae).
- GENTIL, F.A. - population dynamics of ophiuroid species in soft-bottom community of the English Channel.
- GEORGE, S.B. - maternal effects on larval growth and development of echinoderms; morphological and behavioral responses of echinoderm larvae to salinity gradients.
- GIBSON, M.A. - continuing work on biotic interactions of Lower Devonian of West Tennessee; also studying traces of echinoids from the Coon Creek Formation (Cretaceous) and the tiering relationships present within the ichnofauna.
- GIL CID, D. - Cambrian and Ordovician echinoderms and trilobites from Spain; palaeological aspects, morphology and function.
- GINANOVA, T.T. - mechanisms of muscle regeneration.
- GIUDICE, G. - regulation of heat shock protein synthesis in sea urchin embryos; determination of embryonic axes in sea urchins; mechanisms of cell adhesion in sea urchin embryos.
- GLUCHOWSKI, E.L. - Genus Haplocrinites (Inadunata) from the Devonian of Poland.
- GOGGIN, L.C. - diseases of starfish as a method of biological control.
- GOLDBERG, A.S. - investigating antiarthritic properties of echinoderms.
- GONGADZE, G. - Late Cretaceous and Paleogene echinoids of the Caucasus (classification, paleobiogeography, stratigraphy).
- GOODING, R.U. - Animals associated with Caribbean diadematids; animals associated with diadematid echinoids, worldwide.
- GRABOWSKY-KAAIA, G.L. - Albatross recolonization project via the Audubon Society and HI Dept. of Fish and Wildlife.
- GREENSTEIN, B.J. - taphonomy of crown-of-thorns starfish; comparative taphonomy of Caribbean reefs; mode of formation of Pliocene shell beds.
- GROSJEAN, P. - sea-urchins cultivation in closed-systems; especially skelettogenesis and carbonates requirements; growth; population dynamics; model of production; feeding and digestion; influence of abiotic factors.
- GROVES, C. - Heliaster biogeography and systematics.
- GRYGIER, M.J. - taxonomy of western Pacific and Japanese myzostomida; associations of juvenile brittle stars on a coral reef; microlepadid barnacle parasites of Diadema from Singapore.
- GUENSBURG, T.E. - edrioasteroids, early crinoids, paleoecology of echinoderms.



GUERRAZZI, M.C. - natural history and the feeding behavior of the starfish Echinaster brasiliensis.

GUILLOU, M. - REPRODUCTION/RECRUITMENT: responses of sea-urchin population to environmental changes; BIODIVERSITY: seaweed-urchin interaction.

GURREA, I. - echinoids from the Cretaceous and Cenozoic age, Mediterranean region (specifically Western Europe).

GUTT, J. - polar benthos ecology.

HADEL, V.F. - respiratory metabolism of Chiridota rotifera (small holothuroid found in beaches of coarse sand).

HAGEN, N.T. - sea urchin outbreak dynamics: ecological interactions in a macroparasite/sea urchin/kelp forest system. Echiniculture/closed cycle cultivation of sea urchins: broodstock management, photoperiodic control of gametogenesis, growth, feeding, design of cultivation equipment.

HAMZA HASSAN, M. - ecology and biology of echinoderms from Gulf of Suez - Red Sea.

HAUDE, R. - stratigraphy and constructional morphology of scyphocrinoids; Devonian and Carboniferous holothuroids; Lower Devonian echinoderms of Argentina.

HAVARDSSON, B. - the effect of caroteins in feed and environmental temperature on the gonad color and gonad development of the sea urchin Strongylocentrotus drobachiensis (Mueller, 1776). The purpose of the experiment is to develop feed suitable for controlling the quality of the urchin gonad in echinoculture.

HEINZELLER, T.E. - comparative, mainly neuroanatomical, morphology (TEM, histochem.) of crinoids with special attention to milleri-, bourgeti- and cyrtocrinids; entoparasitic myzostomids of crinoids, mutual effects on host and parasite on an ultrastructural basis.

HENDLER, G. - behavior and functional morphology of deep-sea ophiuroids; taxonomy of Okinawan ophiuroids (with S. Irimura); systematics and natural history of eastern Pacific ophiuroids.

HERDENDORF, C.E. - invertebrate fauna associated with deep-sea (>2000 m) shipwrecks; invertebrate fauna of New Zealand (North Island) estuaries and tidal flats; brisingid fauna of North Atlantic Ocean; echinoid (esp. sand dollars) invasion of New Zealand estuaries following diversion of freshwater inflow.

HESS, H. - cyrtocrinid crinoids from Lower Jurassic of southern Switzerland; middle Jurassic echinoderm "Lagerstatte" of Schinznach, northern Switzerland.

HIGHSMITH, R.C. - intertidal studies in Cook Inlet, Alaska.

HILL, R.B. - physiology of holothurian muscle and connective tissue.

HOBERG, M.K. - Alaskan benthic and intertidal systems; the subtidal benthic system in Prince William Sound following the Exxon Valdez oil spill, comparing recovery between oiled and unoled sites; the diet of Pycnopodia



helianthoides from eelgrass habitat in western Prince William Sound.

HODGSON, A.N. - spermatozoan morphology of Patiriella.

HOLTERHOFF, P.F. - Late Paleozoic crinoid paleoecology and systematics; P-Tr extinction and eradication of the Crinoidea.

HOOPER, R.G. - aquaculture of Strongylocentrotus drobachiensis.

HOROWITZ, A.S. - bibliography of the fossil Blastoidea and database of blastoid taxa (with J. Waters).

HOSHI, M. - molecular mechanism of sperm-egg interactions in starfish and sea urchins; structure and function of glycosphingolipids in starfish and sea urchins; 1-methyladenine signal transduction in starfish oocytes.

HOTCHKISS, F.H.C. - larval homeomorphism, Loven's law and adult ray homologies in echinoids, ophiuroids and edrioasteroids; isolated ophiuroid vertebrae and ossicles from Devonian, Bohemia (with Petr & Prokop); Paleozoic ophiuroid morphology & evolution; teratology of sea stars; tetramerism/hexamerism in echinoids and stelleroidea; relation of larval axis to adult axis symmetry.

HOTTENROTT, S.I. - I am now a Ph.D. student at George Washington University and work at NMNH on the deep sea ophiuroid genera Ophiomusium and Ophiosphalma, as well as other genera in the Ophiolepididae. I plan a revision of Ophiomusium and Ophiosphalma, plus a cladistic analysis of the genera and of the family. I am interested in the evolution of these deep sea forms, which have also been identified as possible cases of progenesis. A phylogeny will allow me to investigate these theories.

IRIMURA, S. - taxonomy of Japanese Ophiuroidea; SEM observation on disk granules of Ophiuroidea.

IVY, W.G. - seed production and sea ranching of sea cucumbers.

JABLONSKI, D. - onshore-offshore and latitudinal patterns in the origins of higher taxa, and their subsequent shifts in environmental and latitudinal distribution; studying post-Paleozoic echinoids and stalked crinoids; studying mainly molluscan but some echinoid mass extinction and recovery patterns, especially at the Cretaceous-Tertiary boundary.

JACOBSEN, N.A. - identification and logging of occurrences of invertebrates, vertebrates and geologic features in the Monterey Bay; working especially with asteroidea analysis (WWW images and information will be available in the near future).

JAECKLE, W.B. - nutrient distribution among tissue in planktotrophic larvae; asexual reproduction by larvae of asteroid echinoderms; energetics of larval development.

JAGT, J.W.M. - Latest Cretaceous-early Palaeogene echinoderms (holothurians excepted) from type area of the Maastrichtian Stage; late Maastrichtian echinoderm- 'lagerstatte' with bourgueticrinine crinoids and ophiolepidid and ophiacanthid ophiuroids; high-diversity ophiuroid faunas of Campanian and Maastrichtian age from northeast Germany (with M. Kutscher).

JAMES, D.B. - Seed production in sea cucumbers.

JAMIESON, G.S. - sea urchin abundance surveys; near-shore community population dynamics.

JANIES, D.A. - phylogenetic analyses of the evolution of development among asteroids

JEFFERY, C.H. - Maastrichtian and Palaeocene echinoids; larval strategy in recent and fossil Temnopleuroid echinoids.

JELL, P.A. - early Devonian crinoids and stellaroids from the Bokkeveld Series, Cape Ranges, South Africa; Silurian and Devonian crinoids and stellaroids from eastern Australia; Upper Devonian crinoids from the Canning Basin, western Australia; Early Cretaceous stellaroids from the Great Artesian Basin.

JOHNSEN, S. - absorption spectra of echinoderm visual pigments.

JUINIO-MENEZ, A.R. - culture and population genetics of marine invertebrates (sea urchin); development of mass culture techniques for Tripneustes gratilla.

JUNQUEIRA, A.O.R. - population dynamics of echinoids.

KAWAUCHI, G.Y. - reproduction and dispersion - apodous holothurians.

KELLY, M.S. - feasibility of commercial echinoculture in Scotland (Psammechinus miliaris); echinoderm/subcuticular bacteria symbioses.

KERR, A.M. - ecology, character evolution, diversification and molecular systematics of aspidochirote holothuroids.

KEUSKAMP, D. - recruitment of the endemic New Zealand echinoid Evechinus chloroticus (Echinometridae). Specifically focussing on settlement variability, natural recruitment variability, and experimental manipulation of processes operating immediately post-settlement (using cultured recruits), as well as aspects of development and the chemical ecology of settlement. Especially interested in the effects of sediment on survivorship during and after settlement, and techniques available to determine the nature of these effects. Also, the peculiarities of a marine reserve (as my major study site). Determining the relative influence these processes have on recruitment at several scales may have implications for the (small) roe fishery in New Zealand.

KLINGER, T.S. - digestion in echinoids, asteroids, and holothuroids; population biology of tropical holothuroids; manufactured feeds suitable for the mariculture of echinoids.

KNOTT, K.E. - a molecular phylogeny of the Asteroidea with representative taxa from each family (multiple representatives in some cases) using DNA sequence data from both mitochondrial and nuclear genes.

KOBAYASHI, N. - marine pollution bioassay by using sea urchins; spawning periodicity of sea urchins.

KOGO, I. - crinoidea (living); its classification and distribution in western Pacific.

- KRISHNARAJAH, P. - Holothuria fishery in Jaffna lagoon, northern part of Sri Lanka.
- KURIHARA, T. - activity rhythms of starfish; distributional patterns of starfish.
- LAMBERT, P. - description of two new species of Pentamera and a Phyllophorid (Holothuroidea) from the west coast.
- LANDEIRA, A.M. - characterization of a  $\text{Ca}^{2+}$ -atpase from sea cucumber muscle.
- LANE, D.J.W. - The Echinodermata: a biological tool for the control and protection of marine benthic environments in Singapore waters.
- LANE, N.G. - Devonian (Famennian) crinoids from Northwest China; Bill Ausich and I are slowly compiling a bibliography of all pre-1800 literature on fossil and living crinoids.
- LAWRENCE, J.M. - Characteristics of arm regeneration in starfish; comparative nutrition of sea urchins.
- LE MENN, J. - Paleozoic North-African crinoids (calyx and dissociated columnals); benthic communities, polynomorphes and medium to high frequencies cycles.
- LeCLAIR, E.E. - ophiuroid arm skeletal morphology and biomechanics.
- LEISMAN, J. - recruitment study of brittlestars in the Banana River; also, aspects of regeneration.
- LESSER, M.P. - urchin aquaculture - use of photoperiod to manipulate gametogenesis in Strongylocentrotus drobachiensis.
- LESSIOS, H.A. - molecular phylogeny of Diadema; gene flow in sea urchins; population dynamics of Diadema antillarum; effects of sea urchins on coral recruitment.
- LEVERONE, J.R. - reproductive cycles of Astropecten and Luidia in lower Tampa Bay.
- LEVITAN, D.R. - ecological and evolutionary consequences of sperm limitation in echinoderms; echinoid grazing pressure in the Caribbean.
- LIAO, Y. - fauna Sinica: Ophiuroidea.
- LITVINOVA, N.M. - Revision of the genus Ophiomyces (Ophiacanthidae); new species and genus Ophiuraster (Ophiuridae); ophiuroids of New Caledonia.
- LORDSON, J. - seed production and sea ranching of sea cucumbers.
- LOVELY, E.C. - coexistence of hydroid predators in Tubularia larynx colonies.
- LUCAS, J.S. - Acanthaster planci larvae and juvenile biology.
- MACURDA, JR., D.B. - modern crinoids and blastoids.

MACZYNSKA, S.S. - Cretaceous and Tertiary echinoids particularly from Poland.

MAH, C.L. - a revision and phylogeny of the Brisingida, a group of unusual deep-sea asteroids; describing a new species of Brisingella from the Monterey Bay; visited the Smithsonian (June 1995) and found many lots of brisingids that may show different growth stages; a Pleistocene Ctenodiscus crispatus Retzius from Humboldt County, California (in prep).

MAHARAVO, J. - study about proliferation of Salmaciella erythraxis in Ambaro Bay (Nosy-Be) Northwest coast of Madagascar.

MAIER, M.S. - isolation and structural elucidation of secondary polar metabolites from echinoderms of the South Atlantic Ocean.

MAKRA, A. - arm regeneration in Acrocynida brachiata (Ophiuroidea); microdistribution of A. brachiata in Little Killary, west coast of Ireland bioturbation.

MALLEFET, J.C. - luminescent ophiuroids; morphological, physiological, ecological aspects.

MANNI, R. - systematics, morpho-functionality and evolution of Mesozoic non-isocrinid crinoids.

MANNIFIELD, K. - Dinantian crinoids from northwest Ireland; exploring Camerate ? extinction; crinoid palaeoecology, autecology and palaeobiology; also looking at carbonate reefal environments etc.

MARAN, A.A. - Palaeoecological research of Lower Cretaceous Echinoidea from eastern Serbia (YU); irregular echinoids, especially genus Heteraster, Toxaster, (Spatangoids) and Holaster, biostratigraphy, palaeoecology, taphonomy; Cretaceous echinoids from Serbia (YU); Lower Cretaceous echinoids (Urgonian) and accompanying macro and micro fauna; Lower Cretaceous foraminifers (Orbitolinids).

MARCOS-DIEGO, C. - study of benthic fauna and flora from the southern of the Livingston Island (South Shetland, Antarctica).

MARSH, L.M. - revision of Nardoa and Gomophia (Asteroidea: Ophidiasteridae) - with F.W.E. Rowe; echinoderms of the northwest shelf of Western Australia.

MARTINEZ, P.C. - population and reproductive biology of the sea cucumber Isostichopus fuscus in the Galapagos Islands.

MASCARENHAS, B.J. DE A. - pattern of distribution of asteroidea from Guanabara Bay, Rio de Janeiro, Brazil.

MASSIN, C. - holothurian taxonomy; Easter Island, Indonesia, Papua New Guinea.

MATERIA-ROWLAND, C.J. - developing a manual on coastal and marine monitoring; biological analysis and sediment chemistry analysis of the impact of the aquaculture industry on benthic fauna.

MATTOS-SEGOVIA, E. - the assessment of bioinducers of the settlement in larvae of sea urchin Loxechinus albus.



- MAUBON, R.M. - inventory of historical collections (next: known from Chambery and Lyons, Musee Pleurien sur La Rochelle; inventory of Echinodermata at Museum d'Histoire Naturelle de Grenoble; inventory of Thiery Collection in Nancy (1860-1925) - basis of Lambert and Thiery, fundamental book for 1997.
- McCLINTOCK, J.B. - chemical ecology of echinoderms from the Gulf of Mexico and Antarctica.
- McKENZIE, J.D. - subcuticular bacteria in echinoderms; antifouling mechanisms of echinoderms.
- McLELLAND, J.A. - ophiuroids and holothuroids from near coastal areas of northeastern Gulf of Mexico, Florida coast, and West Indies; ecology and taxonomy.
- McNAMARA, K.J. - Neogene species of the clypeasteroid Peronella from Western Australia; Paleocene spatangoids from the Carnarvon Basin, Western Australia; Miocene echinoids from the Carnarvon Basin, Western Australia; Eocene echinoids from the Bremer Basin, Western Australia; fauna of Australia - spatangoids, holasteroids, clypeasteroids, cassiduloids (with Rich Mooi); general echinoid morphology, physiology and biogeography.
- MEDEIROS-BERGEN, D.E. - selective constraints on brittlestar life histories.
- MEIJER, L. - molecular mechanisms of cell cycle regulation, using starfish oocytes and sea urchin embryos as cellular models; circadian control of the cell division cycle; identification of novel anti-mitotic compounds, with potential anti-tumor activity, using mechanism-based screening assays (purified cell cycle regulating enzymes; detection of inhibitors of cell cycle regulating enzymes in extracts prepared from marine invertebrates (collaboration with Dr. G.R. Pettit, Cancer Research Institute, Arizona State University, Tempe, Arizona).
- MELIKOV, O.H. - investigation, evolutionary, systematic and development of orders Spatangoid, Holasteroid and Holoctypoid of Azerbaijan (late Cretaceous and Eocene).
- MESSING, C.G. - systematics of comatulid crinoids; ecology, growth and taphonomy of Isocrinidae.
- MEYER, C.A. - Tertiary asteroids from the Eggenburg area (Austria); Fossilium catalogus Austriae, Part Asterozoa.
- MIRONOV, A. - Taxonomy and biogeographic history of recent holasteroid echinoids.
- MITROVIC-PETROV, J.R. - study of some Cretaceous and Neogene echinoids of Serbia and Monte Negro (taxonomy, paleoecology, functional morphology, taphonomy); study of some Cretaceous and Neogene echinoids of Greece (together with A. Marcopoulou-Diacantoni - Athens).
- MLADENOV, P.V. - developing techniques for roe enhancement in sea urchins; effects of dietary protein and carotenoids on roe size and quality in sea urchins; fisheries biology of sea cucumbers; biology and ecology of asexual reproduction in echinoderms; parthenogenesis in echinoderms; consequences of brooding and asexual reproduction on gene flow and genetic structure of



echinoderm populations; reproductive biology and ecology of New Zealand and Fijian brittlestars; systematics of New Zealand brittle stars; reproductive biology and ecology of New Zealand crinoids; biology and ecology of the sea cucumber, Stichopus mollis; systematic status, morphometrics, gene flow and genetic structuring of the cosmopolitan brooding brittle star, Amphipholis squamata.

MONTAGUE, C. - regeneration capabilities of sea stars in closed systems.

MOOI, R., B. DAVID, T. CHONE - researching Antarctic echinoids. The final products will include a monograph in book form, as well as an accompanying CDROM with an interactive database giving information on all the natural history cruises to the Antarctic, biogeography of echinoids, keys, illustrations, and searchable files that integrate all these data.

MOONEY, R.C. - red sea urchin (Strongylocentrotus franciscanus) management by the Hesquiaht First Nation: implications for community structure and the successful establishment of a commercial sea urchin fishery.

MOORE, A.M. - baseline survey of the holothurians of the Wakatobi Marine National Park in SE Sulawesi, Indonesia, through Operation Wallacea (MSc thesis research for Masters degree in Global Diversity, Monitoring and Conservation) starting June for around 5 months. This includes taxonomic aspects, holothurian population data and socio-economic aspects (exploitation), recommendations for management and further research.

MORGAN, K. - lecithotrophy in starfish; the evolution of developmental patterns and life cycle evolution.

MORRILL, J.B. - sea urchin larval skeleton bioorganic structure; Echinometra lucunter SEM and LM analysis and atlas of normal development.

MOTOKAWA, T. - biology of stalked crinoids; catch connective tissue.

MOUCHATY, S. - molecular systematics of the Mellitidae.

MUKAI, H. - ecosystem study in tropical and boreal seagrass beds; bioturbation and restructural effects on material flow at interface of sea floor.

NAIDENKO, T.K. - cryopreservation of sea urchin embryos and larvae bioassay by using sea urchin eggs and embryos.

NAKAMURA, R.K. - involved with AQUAVAN, an educational outreach program for the Vancouver Aquarium. I travel around the province of British Columbia bringing seashore life, including sea stars, sea urchins and sea cucumbers into schools to teach children about aquatic conservation.

NAKANO, E. - extracellular matrix in the sea urchin embryo.

NEBELSICK, J.H. - taphonomy of reef echinoids; Lower Miocene echinoid palaeobiogeography.

NEILL, B.J. - biogeography, systematics and population biology of echinometrids.

- NEPOTE, A.C. - holothurians of Marietas Islands, Nayarit, Banderas Bay, Mexico; systematics of holothurians of Banderas Bay, Mexico (central Pacific).
- NESTLER, H. - Cretaceous echinoids.
- NEUMANN, C. - phylogeny and paleoecology of Toxasterid echinoids; echinoids and gastropod predation; Cretaceous echinoids from the Betic Cordillera (Spain); functional morphology of Cretaceous echinoids.
- NICHOLS, D. - reproductive cyclicity in the New Zealand crinoid Oxycomanthus plectrophorum; seasonality in resource allocation in the English Channel starfish Luidia ciliaris.
- NICOSIA, U. - systematics and palaeoecology of Jurassic crinoids; evolution and stratigraphy of non-isocrinids.
- NISHIHARA, M. - effect of heart urchins on coral community structure of the sandy bottom.
- NOJIMA, S. - feeding effects of Acanthaster planci on recruits of corals.
- O'CONNOR, B.D. - bioturbation rates of infaunal echinoderms; connection between hydrographic features and high density ophiuroid populations.
- O'HARA, T.D. - echinoderms of Macquarie Island (final stages); patterns of diversity for faunal assemblages on subtidal reefs off central Victoria (Ph.D. thesis, University of Melbourne).
- OJEDA, F.P. - ontogenetic changes in the diet of Loxechinus albus: an ecophysiological approach. Ecology of intertidal rockpools: role of sea urchins and fishes in determining community patterns.
- OJI, T. - paleontology and biology of stalked crinoids; especially regeneration of crown and arms, and evolutionary history of isocrinines.
- OLSZEWSKA-NEJBE, D. - studying the irregular echinoids in the North European Province; stratigraphy and paleobiogeography.
- OLVER, J. - Mesozoic irregular echinoids; extant British species.
- PABIAN, R.K. - Late Pennsylvanian-Early Permian crinoids, associated faunas, epibionts, paleoecology, and biostratigraphy.
- PAGETT, R.M. - Caspian Sea: literature review.
- PARDO, R.A. - ecology and population dynamics of echinoderms (particularly echinoids and ophiuroids) - currently, population dynamics of sand dollars.
- PARMA, S.G. - Tertiary echinoids from Patagonia and La Pampa Province, Argentina.
- PAULS, S.M. - distribution of the echinoids in coral communities.
- PEARCE, C.M. - marine invertebrate settlement, metamorphosis, recruitment.
- PENCHASZADEH, P.E. - Ecology of sand dollars (Mellita spp); trophic ecology of asteroids.

PENNINGTON, J.T. - primary production in the central California upwelling zone; brachiopod larvae of the Monterey Bay Submarine Canyon.

PEREZ-RUZAF, A. - wetlands and coastal lagoons of Galapagos Islands (Ecuador) - basis for its protection and management; Iberic fauna; study of benthic fauna and flora from the southern of Livingston Island (South Shetland, Antarctica); design of new algorithms for the primary productivity and water quality prediction in coastal zones using remote sensing techniques.

PETR, V. - about 2-year project - preparation of a photographic, comprehensive book on fossil echinoderms from the Barrandian area (Central Bohemia, Czech Republic, Lower Paleozoic). This book will be written in English and published by PERES Publ. Praha.

PHILIPPE, M. - Miocene echinoids.

PIEPENBURG, D. - ecology of brittle stars in Arctic seas.

PIESSE, C.C. - systematics of New Zealand starfish.

PODOLSKY, R.D. - biochemistry of temperature adaptation in gametes of Strongylocentrotus spp.; evolution of egg accessory structures in free-spawning invertebrates.

PORTELL, R.W. - Mio-Pliocene west continental shelf phosphatized echinoids and brachiopods; echinoid biostratigraphy of Florida; Miocene Chipola Formation echinoids (undescribed taxa).

PRESTEDGE, G.K. - study of Pittwater, S.E. Tasmania, re: the regrowth of *Zostera* sp., also Codium sp. beds now that nutrient levels in the water have decreased with upgrading of local sewerage treatment plants, and to see if several species of echinoderms return if the above species of algae recover sufficiently.

PROKOP, R.J. - echinoderms from the Lower Devonian of Barrandian area / Czech Republic; biostratigraphy, paleobiology.

PUTCHAKARN, S. - taxonomic study of echinoderms from the eastern coast, the Gulf of Thailand.

RAJAKUMAR, C.P. - biology and ecology of certain Indian echinoderms; investigating the bioactive substances of Indian echinoderms.

REGIS, M.-B. - population dynamics of regular echinoids in the Mediterranean; enzymatic study of the nutrition of Paracentrotus lividus (Echinodermata: Echinoidea).

REICH, M. - fossil holothurians, especially on Campanian/Maastrichtian holothurian sclerites from Northern Germany, Denmark and England, and Poland; furthermore calcareous ring elements of Cretaceous and Jurassic holothurians.

REY, D. - Cretaceous and Tertiary echinoids of Spain.

ROBINSON, S.M.C. - green sea urchin fishery ecology; roe enhancement of the green sea urchin; development of artificial diets for sea urchins.

- ROCCATAGLIATA, A.J. - chemistry of physiologically active compounds isolated from starfishes and brittle stars in the South Atlantic Ocean.
- RODRIGUEZ, S.R. - subtidal brown macroalgae forests as food sources for intertidal organisms: role in determining community patterns in the rocky intertidal environment.
- ROGERS-BENNETT, L. - examining the impact of larval feeding history on the growth and success of newly settled red sea urchins; examining the survival of newly settled urchins exposed to micro-predators in the benthos; spatial patterns in the growth and survival of juvenile red abalone.
- ROSE, E.P.F. - Jurassic irregular echinoids; Cenozoic holoctypoid echinoid Echinoneus.
- ROTMAN CLARK, H.E.S. - systematics of Southern Ocean asteroids and ophiuroids.
- ROUX, M. - heterochronic development of recent stalked crinoids; paleoecology and taxonomy of Upper Jurassic crinoids.
- ROWE, F.W.E. - Indo-west Pacific echinoderms and their systematics and zoogeography; Indian Ocean echinoderms with A.C. Campbell.
- ROY, M.S. - molecular evolution of ophiuroids: phylogeny, phylogeography, population genetics in Amphipholis squamata, Ophiactis savignyi, and Ophiocoma scolopendrina. (<http://www.dnapop.zi.ku.dk>)
- SABA, M. - taxonomic studies of Japanese sea-stars.
- SAHADEVAN, A.P. - hatchery production and culture of sea cucumbers; monitoring the state of health of coastal waters in relation to pollution.
- SANFORD, E. - foraging behavior, recruitment, and growth of Pisaster ochraceus.
- SANO, M. - population ecology of Strongylocentrotus nudus.
- SASTRY, D.R.K. - echinoderms of coral reefs.
- SCALLY, K. - tooth form function and evolution of invertebrate dental systems, especially tooth sharpening behaviour (thegosis).
- SCHELTEMA, R.S. - larval dispersal - most recently in the Antarctic.
- SCHOPPE, S. - The Echinoderms of Leyte, Philippines - a practical field guide.
- SCHUETZ, A.W. - development of a new model for multiparameter analyses of perturbations of gametic and embryonic processes.
- SEETO, J. - taxonomy of Fiji echinoderms.
- SERAFY, D.K. - zoogeography of Atlantic echinoids.
- SEWELL, M. - life-history and early development in echinoderms; temperature effects on larval development; holothurian reproduction and ecology; larval physiology.



SHEPHERD, S.A. - food web studies; comparison between abalone and sea urchins.

SHICK, M.J. - effects of UV on echinoid eggs and embryos; dietary accumulation of mycosporine-like amino acids by echinoids.

SHIRLEY, T.C. - predator-prey and competitive interactions between sea otters, crabs and starfish in Glacier Bay, Alaska.

SIBUET, M. - deep sea ecology and deep sea echinoderms; cold deep environments; deep sea basins.

SINGLETARY, R.L. - ecology of the seastar Asterias forbesi.

SKOLD, M. - population dynamics, growth, regeneration, feeding and predator-prey interactions in brittle stars; structuring mechanisms in marine benthic populations; interactions between burrowing heart urchins (Brissopsis lyrifera) and brittle stars (Amphiura chiajei); passive suspension feeding in Amphiura filiformis (Echinodermata: Ophiuroidea).

SLOAN, N.A. - sea cucumber fisheries.

SMILEY, S. - annotated catalogue of holothurians with synonymies; annual cycle of Parastichopus californicus, changing conditions of body wall muscles.

SMIRNOV, A.V. - deep-water holothurians from New Caledonia; Arctic and North Pacific echinoderms fauna; taxonomy of apodid holothurians.

SMIRNOV, I.S. - taxonomic studies of arctic and antarctic ophiuroids, creation of illustrated computer key for arctic brittle-stars and data bases on ophiuroids of Arctic and Southern Oceans.

SMITH, A.C. - book on marine biology and medicine.

SMITH, A.B. - morphological and molecular phylogenies of echinoderms; Maastrichtian and Palaeocene echinoids.

SOLIS-MARIN, F.A. - evolution of echinoids; taxonomy of the phylum.

SOLOVJEV, A.N. - Holasteroid and spatangoid echinoids (evolution, classification, paleoecology); echinoids on the Cretaceous/Paleogene boundary.

SONNENHOLZNER, J.I. - systematic evaluation of the reef echinoderms at the Machalilla National Park, Manabi, Ecuador; ecology of the sand dollar Mellita longifissa Michelin intertidally at the Machalilla National Park, Manabi, Ecuador.

SPENCER, L.T. - symbiotic relationship between Holothuria atra and Lissocarcinus orbicularis in Hawaiian waters.

SPONER, R. - molecular evolution of ophiuroids: phylogeny, phylogeography, population genetics in Amphipholis squamata, Ophiactis savignyi, and Ophiocoma scolopendrina. (<http://www.dnapop.zi.ku.dk>)

STAMPANATO, S. - Antarctic starfish.



- STANCYK, S.E. - population biology, predation and regeneration of Ophiura sarsi; sublethal predation of echinoderms; use of markers and growth rings of ophiuroid ossicles for age/growth studies.
- STEWART, B.G. - behaviour and micro-anatomy of the euryalid snake star Astrobrachion constrictum; morphometrics of the ophiuroid, Ophiopsammus maculata; population genetics of snake-stars in Fiordland; photo-identification of holothurians to track growth rates and distribution.
- STICKLE JR., W.B. - investigating seasonal and latitudinal adaptations of Leptasterias spp. populations to temperature from the physiological perspective.
- STORC, R. - ophiuroids from the Upper Cretaceous (Cenomanian-Turonian) of the Bohemian Cretaceous Basin (Czech Republic).
- STRATHMANN, R.R. - developmental plasticity of larvae; limits on the aggregation of embryos; evolution of rates of development of embryos.
- STUMP, R.J. - population dynamics of Acanthaster planci (L.).
- SUMIDA, P.Y.G. - ecology and ontogeny of the post-larval development in deep-sea ophiuroids.
- TABLADO, A. - systematics of Asteroidea from southwestern Atlantic and Antarctic Peninsula.
- TAHERA, Q. - systematics, taxonomy of echinoderms of the Arabian Sea.
- TAKAHASHI, K. - physiology of the madreporite; physiology of echinoid spine muscle and catch apparatus; motile mechanism of echinoderm sperm flagella.
- TAVARES, Y.A.G. - ecology, histology, morphology studies of Mellita quinquiesperforata in beaches of Parana's State, relation between morphodynamics and spatial distribution.
- TELFORD, M. - collagen in tooth support mechanism of clypeasteroids; podial forces in Asterias; computer simulation of Dendraster distribution.
- THANDAR, A.S. - study of deep sea holothuroids taken from off the Kwalulu-Natal coast, South Africa; the holothuriid holothuroids of southern Africa with descriptions of new species.
- THIERRY, J. - Jurassic (Mesozoic) echinoids - France and some western Europe countries; morphology and relation with palaeoenvironment changes (overall sea-level variation).
- THORNDYKE, M.C. - molecular and cellular aspects of neuronal development; environmental influences on development; neuronal regeneration; neuropeptides, biochemistry and physiology.
- THORSEN, M.S. - the ecophysiology of the irregular sea urchin Echinocardium cordatum - interactions with gut microbiota.
- TIEFENTHALER, L. - research on the red brittlestar Amphiodia urtica.

- TOMINAGA, H. - biology of the sand dollar and heart urchin, especially key-hole urchins: Echinodiscus tenuissimus and Astriclypeus manni in Japan, and brooding spatangoids like Abatus, encompassing population study, growth, development, age determination.
- TRONCOSO, J.F. - identifying collections of Antarctic echinoderms in the Natural History Museum of Concepcion, Chile; studying several species of echinoderms from the Pacific coast Eight Region; the conservation problems of the echinoderms of Chile and their future projection.
- TUTERA, P. - monograph of the irregular echinoids of Prydz Bay, Antarctica; new Pachycentrotus species.
- UBAGHS, G.J. - new echinoderms from the Upper Cambrian of the Montagne Noire (southern France).
- v.JUTERZENKA, K. - ecology of Arctic ophiuroids and their function within the benthic food web (within the framework of AOSGE).
- VADAS, R.L. - ecology and reproductive biology of sea urchins along the coast of Maine. Funded by NOAA Sea Grant (1995-1997); temporal and spatial variability in reproduction and roe yield in green sea urchins. Tentatively funded by Maine Dept. Mar. Res. (1996-1997).
- VADET, A. - Triassic echinoids of St. Cassian; evolution of Triassic and Jurassic echinoids.
- VALENTINE, J. - continuing investigations of sea urchin herbivory and predation on sea urchins in the Florida Keys.
- VAN DER HAM, R.W.J.M. - Hemiaster and Echinogalerus of the Upper Cretaceous of NW Europe.
- VANDENSPIEGEL, D. - the defensive mechanism of the Echinodermata: structure and functions of the Cuvierian tubules.
- VEGA, J. TORRES - study of the echinoids and ophiuroids collected on the Campanas Oceanograficas Proibe I-II-III-IV-V.
- VIKTOROVSKAYA, G.I. - reproduction of invertebrates in artificial and natural conditions.
- VILLIER, L. - Cretaceous and Jurassic asteroids of the Aquitaine Basin (France) dealing with taxonomy (based on isolated ossicles in a Tethyan region, weakly known), skeletal ontogeny, evolutionary trends (ontogenetic and ecological constraints, biogeographic exchanges) and relations between biodiversity and paleoenvironmental changes.
- VISTISEN, B.K. - studying the two brittle stars Ophiura albida and Amphiura filiformis concerning their tolerance towards hypoxia with and without the presence of hydrogen sulphide.
- WAREN, A.H. - gastropods parasitic on echinoderms.
- WASSON, K. - reproduction and factors that control reproduction in echinoids.
- WATTS, S.A. - steroid metabolism in echinoids.

WEBSTER, G.D. - Permian crinoids of Western Australia & Queensland - will be in Western Australia for August 1997 - July 1998 working with Peter Jell at Queensland Museum; Permian crinoid paleobiogeography; Pennsylvanian crinoids of Minturn Formation, Colorado with Karen Houck; Late Devonian crinoids of White River Plateau, Colorado with Dan Hafley; continue compilation of Bibliography and Index of Paleozoic crinoids.

WELSCH, U. - innervation of the juxtaligamental cells in crinoids; analysis of the connective tissue of crinoids.

WHITE, C. - crinoids.

WILKIE, I.C. - functional morphology and mechanics of the echinoid lantern; functional morphology and mechanics of the ophiuroid mouth-frame; organisation, mechanics and physiology of echinoderm connective tissues; autotomy mechanisms of echinoderms and other invertebrates.

WILLCOX, M.S. - molecular phylogeny of asteroids; genetic basis to salinity adaptation in asteroids.

WORHEIDE, G. - actuopaleontology and ecology of Astrosclera willeyana Lister 1900 (Demospongiae) (for Ph.D. thesis); taphonomy of coral reef echinoids.

WRAY, G.A. - evolution of body-patterning genes in echinoderms; evolution of echinoderm larvae; phylogeny of echinoids.

YAMAGUCHI, M. - supervise a thesis on Acanthaster planci.

YANAGISAWA, T. - larval development from plutei to metamorphosis of the sea urchins in the Ogasawara (Bonin) Islands.

YOSHIKATO, K. - molecular evolution of invertebrate collagen.

ZAVODNIK, D.V. - biodiversity of the Adriatic Sea invertebrates - Echinoderm distributional patterns.

ZITT, J. - Lower Cretaceous crinoids of West Carpathians; crinoids and echinoids of the Bohemian Cretaceous Basin (late Cenomanian- early Turonian).

\*\*\*\*\* INFORMATION REQUESTS \*\*\*\*\*

- Archer, J. - I would like to correspond with anyone who has any information /contacts with anyone in the Beche de Mer fisheries in Asia and the Pacific. In particular, importers, distributors and buyers.
- Bregman, Y.E. - I should like to get a computer software of complete ELEFAN or maybe something similar - to analyze the size-age structures of sea cucumber trepang and other commercial holothurians; would be grateful to receive reprints with data on size-age structures, growth, food preferences, artificial foods for Strongylocentrotus intermedius and Strongylocentrotus polyacanthus.
- Cutress, B.M. - I would value reprints of papers on holothurians: faunal studies, taxonomy, geographical distribution, biology and morphology.
- Evdokimov, V.V. - I would be grateful to the specialists and institutions if they would send reprints of papers and abstracts on molluscs (Gastropoda).
- Feder, H.M. - I would like to contact anyone working with sea stars in subarctic and arctic regions. In particular, I would be interested if anyone has any sea-star abundance data for subarctic and arctic regions. I have sea-star abundance data from the northeastern Bering and southeastern Chukchi seas and would like to compare distribution data.
- Juinio-Meñez, M.A.R. - would like to contact researchers working on population genetics of sea urchins and other echinoderms using protein electrophoresis and other DNA level marker (e.g. MTDNA RFCPs)
- Knott, K.E. - I am looking for any asteroid samples that I can include in my phylogeny. If you have any live/frozen/ethanol preserved sea stars and can spare some tissue from them please let me know. Also if you are planning a collecting trip and need help, I will work for asteroid samples. Thanks.
- Krishnarajah, P. - As I am a Senior Lecturer, I could get a sabbatical leave after my appointment date of 6 years (that is in 2000). In that period I request contact with scientists who will allow me to do research in my field.
- Maran, A. - would like to make contact with anyone who researches Urgonian echinoids, their stratigraphy (Barremian-Lower Aptian boundary), palaeoecology, distributions and taphonomy; interested in any information about Upper Cretaceous genus Hemiaster; would like to make contact with anyone who studies recent sea-urchins of the Mediterranean region (shallow-water echinoids).
- Meijer, L. - Who could provide 2 kg of brittle stars (species available in large quantities), for detection of potential anti-



tumour molecules (collaboration with Dr. G.R. Pettit in Arizona) ? We just need you to weigh the ophiuroids, add 50 % ethanol for 24 hrs, discard the ethanol, seal the bag and send it to us (shipment will be at our cost !) ! For more information contact Laurent MEIJER (Station Biologique, 29680-Roscoff, France), fax:(33).2.98.29.23.42 or E-mail: meijer@sb-roscoff.fr; Has anyone observed circadian dependent cell division in Echinoderms (or other organisms) ?

Olszewska-Nejbert, D. - would like information about Micraster, Echinocorys, Holaster and Conulus.

Podolsky, R.D. - I request measurements of egg size and the size of accessory structures (jelly coats, follicle cells, test cells, hulls, etc.) for a survey across all marine invertebrates. Please include reproductive mode (free spawning, brooding). Sperm measurements also appreciated.

Rowe, F.W.E. - I would appreciate receiving any spare/duplicate reprints if their space is otherwise required.

Roy, M.S. and R. Sponer - would like to get sample material of Amphipholis squamata, Ophiactis savignyi, Ophiocoma scolopendrina from as many areas as possible, preferably preserved in alcohol or DMSO/NaCl. Also to make contact with anyone working on these species.

Sahadevan, A.P. - requests reprints on the hatchery production and culture of sea cucumber Holothuria scabra; interested in reproduction and sexual dimorphism in holothurians.

Tahera, Q. - would appreciate any publication on echinoderms relating taxonomy, systematics, papers on reproduction, larval distribution and biodiversity.

Thandar, A.S. - would like to receive specimens of Thyone, Havelockia and related genera in the Thyoninae and Sclerodactylinae (sensu Panning, 1949) for revision of these two subfamilies (? families).

Tominaga, H. - would be grateful to receive specimens preserved in alcohol or formalin of the brooding spatangoids for developmental work; also, information on the occurrence of the brooding spatangoids and sand dollars populations pertaining to the juveniles and adults would be helpful.

Villier, L. - interested in asteroid paleontology and also ontogeny, biodiversity, ecology, constructional morphology and evolutionary trends of echinoderms.

---

\*\*\*\*\* ANNOUNCEMENTS \*\*\*\*\*

Hess, H. - The book "Fossil Crinoids" (edited by H. Hess, W.I. Ausich, C.E. Brett and M.A. Simms, with contributions of S.K. Donovan, H. Hagdorn, D. B. Macurda and W.L. Taylor - published by Cambridge University Press, will be finished early next year (1997) and then go into print.



Jagt, J.W.M. - Natural History Museum Maastricht may be found at  
www.nhmaastricht.nl

Maubon, R.M. - permanent volunteer in Museum d'Histoire Naturelle de  
Grenoble (replaced Daniel Fournier).

Melikov, O.H. I'm looking for sponsor for journey to Smithsonian  
Institute with the purpose of cooperation, scientific information  
exchange, as well as to publish papers at the foreign publishing  
houses.

Maharavo, J. - I would be very pleased to participate on an Echinoderm  
conference.

Thandar, A.S. - Holothuria cinerascens (Brandt) was observed to be  
bagged by a local fisherman in Mauritius for supply to some local  
Chinese restaurants.

---

\*\*\*\*\* SUGGESTIONS \*\*\*\*\*

Zitt, J. Preparing a book summarizing the present state of knowledge  
of echinoderm taphonomy would be very useful (see No.21 of this  
newsletter). In addition to the general chapters, several special new  
papers might be included. As for myself, I could supply the data on  
cyrtocrinid crinoids, which are the European Mesozoic speciality, and  
some other.

---

\*\*\*\*\*

**Creeping Comatulid**

Allison, William (Maldives)

I have recently been observing feather stars perambulating about  
on the sandy upper inner slope of a ring reef (faru) in Maldives. I  
think they have been swept off their perches closer to the outside of  
the reef and carried across the degraded reef top until where the  
lagoon deepens and the influence of current and waves decreases. There  
they they crawl about looking for a hard prominence to climb and  
attach to.

The feather star (a black one resembling *Colobometra perspinosa*)  
curls a few (2 or 3) forward arms up and extends them forward like an  
elephant might curl its trunk. It then touches the tip of an arm to  
the substrate (sand in this case) and the rest of the arm follows, the  
pinnules, which were flexed slightly upwards as the arm descended, no  
flexing down until contact is made and the podia adhere (I assume),  
producing a wave-like effect from the distal end of the arm towards  
the proximal, until about half of the arm is lying flat on the  
substrate. The arm then bends like a knee, pulling the critter  
forward. Once the planted portion of the arm is close to the calyx,

the arm is again lifted. Meanwhile a few arms at the back are rolled and carried forward under the animal where they are planted in flexed position. They are extended, poling the animal forward. There always seem to be one or two arms extended upwards at apparently haphazard angles and if a wave throws the beast over off-balance, it blocks the fall with one of these arms which always seems positioned to do the job under the conditions observed. I watched to see if I could detect a pattern to the order in which the arms were deployed, but could not make out more than an impression of coordination. It rolls along over irregular terrain with troughs and hillocks higher than it is, adjusting its gait as it goes. The crew of symbiotic shrimp (Pr. *Periclimenes* sp.) were easily discerned because sillouetted against the sand, hopping about in the rigging of their unique all-terrain vehicle.

Judging by my communication with Dr. Rudiger Birenheide and what is stated in an elementary Invertebrate textbook (Barth and Broshears (1981 - information below) the use of the arms for walking, if not the phenomenon in general, may be rare. I wonder to if it is possible that they use the cirri for small moves, say to shift position on a prominence, and the arms when marathoning. I would expect also to see an optimal search pattern for a good holdfast, and perhaps interference competition in this environment where the prominences are few and far between and the feather stars relatively abundant - at least they were at the several times of observation. I am interested in pursuing this further and invite comments and suggestions. Has anyone else seen this?

Barth, R.H. and Broshears, R.E. 1981. The Invertebrate World, Saunders, New York. p. 530: "...sea lilies limited behaviourally because of their sessile condition. Only slight bending movements are possible." "Feather stars (comatulids) are rather more active. These stalkless crinoids can walk and swim.... Walking involves the clawlike cirri and, occasionally, the arms."

e-mail: lintel@dhivehinet.net.mv

---

\*\*\*\*\*

#### OBITUARY - FRANKLIN BOONE HARTSOCK

(by John M. Lawrence)

Franklin Boone Hartsock was born in Washington state in 1921 and died in Alaska in 1995. He received his academic training at North Idaho Junior College, the University of California at Berkeley, and the University of Washington. He was a member of the staff at the Alaska Fishery Science Center, Kodiak, Alaska since 1969. Although his work was primarily with crabs, his enthusiasm and admiration for starfish was intense. His letters describing his observations and ideas were always a delight to read. He collected much important information about them, particularly *Asterias amurensis*, which most unfortunately is unpublished.

\*\*\*\*\* ECHINODERMS IN LITERATURE \*\*\*\*\*

Ailsa's Section

(contributed by John. M. Lawrence)

Masterton, G. 1996. "He knew all of the arcane secrets of great French cookery, right down to roast camel's hump, which the Algerians prepare with oil, lemon juice, salt, pepper and spices, roasted like a sirloin of beef, and served on a bed of watercress. He knew all of the Chinese recipes that the bravest of his customers couldn't face, like beche-de-mer, the sea slug, which had no flavor whatsoever and the consistency of a jellyfish." The Secret Shih Tan.

Ondaatje, M. 1992. "I was used to her like this in my arms, she had spun around me in my room like a human reflection of the fan -- her arms out, fingers like a starfish". The English Patient.

Oe, K. 1972. "His own face, wan, with ink-black whiskers like the spines of a sea urchin sprouting around his lips, the skin particularly drawn because he had been lying on his back and, beneath the skin, scarcely any flesh or fat at all, seemed to have returned to the true face he had somewhere along the line lost the right to possess." The Day He Himself Shall Wipe My Tears Away.

Bachman, R. 1997. "The screen was ajar; the redhead's hand, white and still as a starfish cast up on the beach, was caught in it... Johnny pulled the screen door open. He hesitated, not sure how to proceed, then picked up the girl's cold starfish hand and felt for a pulse. For a moment there was nothing, and then--." The Regulators.

\*\*\*\*\* THESES AND DISSERTATIONS \*\*\*\*\*

ARGENTINA

Ph.D. Dissertation

Roccatagliata, A.J. 1996. Isolation and characterization of biologically active metabolites of equinoderms of South Atlantic Ocean. Dept. of Organic Chemistry, Faculty of Exact and Natural Sciences, University of Buenos Aires.

AUSTRALIA

Honours Thesis

Murray, James. 1996. Ecological aspects of the eulimid gastropod Sabinella orbignyana. Department of Zoology, University of Western Australia. (The eulimid lives in galls on the slate-pencil urchin Phyllacanthus irregularis. The thesis considers population structure, life cycle and reproduction and development of the snail and morphology of the gall in the spine of the urchin.).

Master of Environmental Studies

Materia-Rowland, C.J. 1997-1999 (in progress). The role of communities in coastal and marine monitoring. University of Tasmania, Hobart.

AUSTRIA

Masters Thesis

Barić, S. 1997. Ecophysiological and systematical studies on two brittle-stars (Ophiothrix quinquemaculata and Ophiothrix fragilis) in the northern Adriatic Sea. University of Innsbruck, Austria, 108 pp.

AZERBAIJAN

Ph.D. Dissertation

Melikov O.H. Upper Cretaceous sea urchin of Azerbaijan part of Minor Caucasus and their stratigraphic importance. Azerbaijan Institute of Oil and Chemistry, Baku, 1966 24 p.

CANADA

Masters Thesis

Allison, W.R. 1997. Performance of the line-intercept transect in the coral reef habitat: Accuracy, precision, errors and their control. Zoology Department, University of Toronto, Ontario.

## CZECH REPUBLIC

### Masters Thesis

Štorc, R. 1996. Ophiuroidea in the Upper Cenomanian and Lower Turonian of the Bohemian Cretaceous. 246pp., 171 textfigs. Charles University, Praha.

## FRANCE

### Ph.D. Dissertation

Philippe, M. 1996. Miocene echinoids from the Rhône Basin: a systematic revision. Université Claude Bernard - Lyon 1: 513pp., 36 figs., 2 tables, 26pls.

### Doctorat en Sciences

Maharavo, J. 1993. Étude biologique de l'oursin comestible Tripneustes gratilla (Linnaeus, 1758) dans la région de Nosy-Be (Côte - Nord ouest de Madagascar): Densité, microrépartition, nutrition, croissance, processus reproducteur et impact de l'exploitation sur les populations. Univ. Aix-Marseille III - France.

### DEA Sciences de l'Environnement marin

Dombrowski, E. 1995. Réponses reproductives de l'oursin Paracentrotus lividus en relation avec une consommation de Caulerpa taxifolia et influence sur le développement larvaire. Université d'Aix-Marseille II, Fr.: 41 p.

### DEA Paléontologie, Dynamique sédimentaire, Chronologie

Villier, L. 1996. Les Goniasteridae (Asteroidea, Echinodermata) du Campanien d'Aquitaine: ontogenèse, évolution et paléoécologie (dir: D. Nérandeau, B. David). Université de Bourgogne, Dijon. pp.1-50.

### Dissertation Maîtrise

Gobert, J. 1992, Effet de la diffusion des substances émises par Caulerpa taxifolia sur le comportement alimentaire de l'oursin Paracentrotus lividus et étude de la place de Caulerpa taxifolia dans les préférences alimentaires de l'oursin Paracentrotus lividus. Maîtrise Univ. Pierre et Marie Curie, Paris, Fr.: 17p.

Malestroit, P. 1994. Comportement alimentaire de Paracentrotus lividus en présence de Caulerpa taxifolia en été: ration alimentaire et taux d'absorption. Mémoire Maîtrise Biol. org. Populations, Univ. Montpellier, Fr.: 25 p.

### DEA Océanologie

Menager, V. 1994. Comportement alimentaire de Paracentrotus lividus en présence de Caulerpa taxifolia: ration alimentaire et taux d'absorption. Univ. Aix-Marseille II, Fr.: 51 p.



Ruitton, S. 1993. Comportement alimentaire et indices physiologiques de Paracentrotus lividus (Echinidae) dans un peuplement à Caulerpa taxifolia (Chlorophyte). Univ. Aix-Marseille II, Fr.: 44 p.

#### **Stage Erasmus**

Puddy, L. 1994. Ration alimentaire et taux d'absorption de Paracentrotus lividus nourri avec Caulerpa taxifolia in vitro. Univ. Aix-Marseille II, Fr.: 29 p.

Sarrazin, T. 1996. Relation entre densité des individus et ration alimentaire chez l'Echinoderme Paracentrotus lividus. Mém. Maîtrise Sci. Environnement, Océanologie, Univ. Bordeaux I, Fr.: 1-20.

### **GEORGIA**

#### **Degree of Doctor of Science and Geology**

Gongadze, G. Late Cretaceous echinoids of the Caucasus and its stratigraphic and paleobiogeographic value. Tbilisi State University, 1994.

### **GERMANY**

#### **Masters Thesis**

Mayer, M. 1995. Epibenthic distribution patterns on the continental slope off East Greenland in German". Kiel University.

#### **Ph.D. Dissertation**

C. Dahm. 1995. Ökologie und Populationsdynamik antarktischer Ophiuroiden (Echinodermata). University of Bremen.

Schmid, M. K. 1994. On the distribution and respiration of ecologically important benthic animals in the waters off Svalbard in German". Kiel University.

### **GUAM**

#### **Masters Thesis**

Kerr, A.M. 1994. Effects of disturbance on holothuroid (Echinodermata) community structure. University of Guam. 59p.

### **INDIA**

#### **Master's Thesis**

Sahadevan, A.P. 1993. Pheromones in fishes. Cochin University of Science and Technology.

## IRELAND

### Ph.D. Dissertation

Makra, A. (in progress). The investigation of key roles and successional dynamics in soft-bottom communities. National University of Ireland.

## JAPAN

### Graduation Thesis

Fujita, Y. 1996. Umishidarui ni kyousei suru jukyaku-koukakurui no shukushu sentaku (Host selection of decapod crustaceans symbiotic on crinoids). Dept. of Marine Science, Faculty of Science, University of the Ryukyus, iv + 1-103, pl.s 1-12. (in Japanese).

## NEW ZEALAND

### Masters Thesis

Archer, J. 1995. Aspects of the reproductive and larval biology and ecology of the temperate holothurian Stichopus mollis (Hutton). University of Auckland's Leigh Marine Laboratory.

Mladenov, P.V. 1995. Comparative study of reproduction in three tropical brittle star species at Fiji. University of Otago, New Zealand, Rachel Law.

Brewin, P. 1995. Effect of algal diet on gametogenic cycle, biochemical composition and size of gonads of kina, Evechinus chloroticus. University of Otago, New Zealand.

Garrett, K. 1995. Reproduction and population genetics of the brooding brittlestar, Ophiomyxa brevissima. University of Otago, New Zealand.

## PAKISTAN

### Ph.D. Dissertation

Tahera, Q. (in progress). Systematics, reproduction and larval distribution of holothuroids and echinoids inhabiting the Arabian Sea. University of Karachi.

## POLAND

### Ph.D. Dissertation

Olszewska-Nejbert, D. 1996. Turonian-Coniacian irregular echinoids of Mangyshlak (western Kazakhstan) and Opole Throught (southern Poland). (In Polish). Institute of Geology, University of Warsaw.

## **SOUTH AFRICA**

### **Masters Thesis**

Khonjwayo, N. 1996. Reproductive biology of the sea cucumbers Holothuria (Semperothuria) cinerascens (Brandt) and Pseudocnella sykion (Lampert) from the east coast of South Africa. University of Durban-Westville. 177pp.

## **SPAIN**

### **Ph.D. Dissertation**

Domínguez Alonso, P. (in progress). Anatomy, morphology and function of Ctenocystoidea (Carpoidea Echinodermata). Universidad Complutense de Madrid.

## **SRI LANKA**

### **M.Phil. Thesis**

Elanganayagam, P. 1984. Studies on ecology and some aspects on biology of Sri Lankan holothurians. University of Jaffna.

## **UNITED KINGDOM**

### **Ph.D. Dissertation**

Jeffery, C.H. 1997. Echinoid evolution across the Cretaceous-Tertiary boundary. Imperial College, University of London.

### **Masters Thesis**

Moore, A.M. Global Biodiversity Monitoring and Conservation currently writing, subject is a review of literature and methodologies applicable to a Holothurian Survey of the Wakatobi Marine National Park. Hull Univ.

## **UNITED STATES**

### **Masters Thesis**

Anthony, J.A.M. 1995. Habitat utilization by sea otters (Enhydra lutris) in Port Valdez, Prince William Sound, Alaska. University of Alaska, Fairbanks. (This thesis contains information about sea stars, sea urchins and sea cucumbers as components of the diet in Port Valdez).

Bowles, M. (in progress). Foraging behavior of holothurians. University of Tennessee, Tennessee.

Eble, G.J. 1995. Macroevolution in disasteroid, holasteroid and spatangoid irregular echinoids. M.S., Evolutionary Biology, The University of Chicago.

Knott, K.E. 1995. A comparative study of the morphological and biochemical

variation in two forms of Luidia clathrata from the northern Gulf of Mexico. University of Alabama.

Mah, C. 1997. A cladistic analysis, taxonomic revision and investigation of paedomorphosis in brisingidan starfish. San Francisco State University, San Francisco, CA.

Miller, S.R. 1996. An analysis of the proximate composition and production of Luidia senegalensis (Lamarck) (Echinodermata: Asteroidea) during the annual reproductive cycle. University of South Florida, Tampa.

Rose, C.L. 1997. Distribution, body size, and regeneration of the amphiuroid Ophiophragmus filograneus in the Tampa Bay area, with special reference to the presence of the seagrass Halodule wrightii. University of South Florida, Tampa.

Sklarounos, S. 1996. The ecology and reproductive biology of the sand dollar Echinarachnius parma, in Kasitsna Bay, Alaska. University of Alaska, Fairbanks, Alaska.

#### **Ph.D. Dissertation**

Beddingfield, S. 1997. The nutrition, growth, reproduction and population dynamics of the echinoid Lytechinus variegatus (Lamarck) from contrasting habitats of Saint Joseph's Bay, Florida. University of Alabama, Birmingham.

Creaser, E. 1997. Functional and phylogenetic characteristics of clypeasteroid intraskeletal matrix proteins. University of South Florida, Tampa.

Eble, G.J. (expected 1997). Macroevolution in disasteroid, holasteroid and spatangoid irregular echinoids. Ph.D., Evolutionary Biology, The University of Chicago.

Johnsen, S. 1996. The optical design of the photic system of ophiuroids. University of North Carolina.

Medeiros-Bergen, D. 1996. Molecular identification, coastal distribution and recruitment of Cucumaria frondosa larvae in the western Gulf of Maine. University of New Hampshire.

Pomory, C.M. 1997. The effects of regeneration on the allocation of energy in Ophiocoma echinata (Lamarck, 1816) (Echinodermata: Ophiuroidea). University of South Florida, Tampa.

### **YUGOSLAVIA**

#### **Master's Thesis**

Maran, A.A. 1996. Echinoidea from the Urgonian sediments of eastern Serbia (Regular and irregular sea urchins, classification, stratigraphy, palaeoecology). Faculty of Mining and Geology, Belgrade.

\*\*\*\*\* RECENT ECHINODERMS PUBLICATIONS AND PAPERS IN PRESS \*\*\*\*\*

- Abraham, R.T., M. Acquarone, A. Andersen, A. Asensi, R. Bell, F. Berger, C. Bergounioux, G. Brunn, C. Buquet-Fagot, D. Fagot, N. Glab, H. Goudeau, M. Goudeau, P. Guerrier, P.J. Houghton, H. Hendriks, B. Kloareg, M. Lippai, D. Marie, B. Maro, L. Meijer, J. Mester, O. Mulner-Lorillon, S.A. Poulet, E. Schierenberg, B. Schutte, D. Vaultot, and M.H. Verlhac. 1995. Cellular effects of olomoucine, an inhibitor of cyclin-dependent kinases. *Biol. Cell* 83:105-120.
- Adams, N.L., and J.M. Shick. 1996. Mycosporine-like amino acids provide protection against ultraviolet radiation in eggs of the green sea urchin, Strongylocentrotus drobachiensis. *Photochemistry and Photobiology*, 64:149-158.
- Ameziane, N., and M. Roux. (in press). Biodiversity and evolutionary biogeography of stalked crinoids. *Biodiversity and Conservation*, Spec. Issue, Biodiversity in the Deep-Sea, 8 fig., 1 tabl.
- Ausich, W.I. 1995. What is Mitrocrinus wetherbyi S.A. Miller and Gurley, 1894? *J. Paleont.* 69(6):1188-1190.
- Ausich W.I. 1996. Crinoid circlet plate homologies. *J. Paleont.* 70(6):955-964.
- Ausich, W.I., and R.L. Guenther. 1996. Blastoids from the Cuyahoga Formation of Ohio (Echinodermata: Lower Mississippian). *Kirklandia*, The Cleveland Museum of Natural History, 49:1-5.
- Ausich, W.I. 1996. Phylogeny and classification of Ordovician Crinoidea (Echinodermata). [abstract] *Geological Society of America Abstracts with Program*, 28(7):292.
- Ausich, W.I. 1996. Ordovician diversification of the Crinoidea (Phylum Echinodermata) [abstract]. *Geological Society of America Abstracts with Program*, 28(6):28.
- Ausich, W.I., L.E. Babcock. 1996. Phylogenetic affinities of Echmatocrinus brachiatus (Middle Cambrian, Canada). [abstract]. *North American Paleontological Association Abstracts*: 16.
- Azevedo, W.F., Leclerc, S., Meijer, L., Havlicek, L., Strand, M., and Kim, S.H. 1997. Inhibition of cyclin-dependent kinases by purines analogues: crystal structure of human cdk2 complexed with roscovitine. *Eur. J. Biochem.*, in press.
- Bangi, H., N. Macawaris, and M.A. Juinio-Meñez. 1995. Spatio-temporal variations in the population structure of the unexploited sea urchin Salmacis sphaeroides in Bolinao, Pangasinan. *Phil. Scientist: Special Issue*, Proc. 3rd Nat. Symp. Mar. Sci: 1-15.
- Baumiller, T.K., G. Llewellyn, C.G. Messing, and W.I. Ausich. 1995. Taphonomy of isocrinid stalks: influence of decay and autotomy. *Palaios* 10(1):87-95.
- Baumiller, T.K., and A. Gazdzicki. 1996. New crinoids from the Eocene La Meseta Formation, Seymour Island, Antarctic Peninsula. *Palaeontologia Polonica* 55: 101-116.
- Birkeland, C. 1996. Why some species are especially influential on coral-reef communities and others are not. *Galaxea* 13:77-84.
- Baumiller, T.K. 1996. Boreholes in Middle Devonian blastoid Heteroschisma and their implications for gastropod drilling. *Palaeogeography, Palaeoclimatology, Palaeoecology* 123: 343-351.



- Baumiller, T.K., and Ausich, W.I. 1996. Crinoid stalk flexibility: Theoretical predictions and fossil stalk postures. *Lethaia* 29:47-59.
- Baumiller, T. K., Messing, C. and Bellew, P. Scaling principles in crinoids. Geological Society of America. Abs. Progs..
- Baumiller, T.K. and Rome, L. 1996. Nearest-neighbor analysis of individuals of Neocrinus decorus: implications to crinoid ecology. 9th International Echinoderm Conference, San Francisco, Aug. 1996 Prog. and Abs., p. 27.
- Beaver, H.H. 1996. Hydrosphere meshwork of the Carboniferous blastoid Pentremites Say. *Jour. Paleontology*, 70(2):333-335.
- Beaver, H.H., and A.J. Fabian. (in press). Color patterns in Mississippian (Chesterian) Blastoids. *Journ. Paleontology*.
- Beddingfield, S.D., and J.B. McClintock. 1993. The feeding behavior of the sea star Astropecten articulatus (Echinodermata: Asteroidea): an evaluation of energy-efficient foraging in a soft-bottom predator. *Marine Biology* 115:669-676.
- Beddingfield, S.D., and J.B. McClintock. 1994. Environmentally-induced catastrophic mortality of the sea urchin Lytechinus variegatus in shallow seagrass habitats of Saint Joseph's Bay, FL. *Bull. Mar. Sci.* 55(1):235-240.
- Beddingfield, S.D. Temporal and spatial patterns of food resource utilization in the echinoid Lytechinus variegatus in contrasting habitats. *Bull. Mar. Sci.* (submitted).
- Beddingfield, S.D. Differential growth and nutrient allocation in the regular echinoid Lytechinus variegatus in response to different natural diets. *J. Exp. Mar. Biol. and Ecol.* (submitted).
- Beddingfield, S.D., and J.B. McClintock. Diet of the sea star Astropecten articulatus in the northern Gulf of Mexico. Prospective journal: *Biol. Bull. Mar. Sci.*
- Beddingfield, S.D., and J.B. McClintock. Competition between two sympatric sea stars, Luidia clathrata and Astropecten articulatus. Prospective journal: *Oecologia*.
- Beddingfield, S.D., T. Ebert, and J.B. McClintock. Age estimation in the echinoid Lytechinus variegatus using pigmented growth zones in the Aristotle's lantern. Prospective journal: *Mar. Biol.*
- Beddingfield, S.D., T. Hopkins, and J.B. McClintock. Invertebrates associated with the echinoid Lytechinus variegatus in the Gulf of Mexico. Prospective journal: *Mar. Behav. Physiol.*
- Belyaev, G., A.N. Mironov. 1996. Starfishes Porcellanaster and Caulaster (Porcellanasteridae) from the Atlantic and the Antarctic. *Zoologicheskij Zhurnal* 75(6):886-899.
- Bergen, M. 1996. Class Holothuroidea. In: Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14. Miscellaneous Taxa. (ed. J.A. Blake, P.F. Scott, and A. Lissner). Santa Barbara Museum of Natural History, Santa Barbara, California.
- Birenheide, R. and T. Motokawa. 1996. To be stiff or to be soft-the dilemma of the echinoid tooth ligament. I. Morphology. *Biol. Bull.* 190:218-230.
- Birenheide, T., A. Tsuchi and T. Motokawa. 1996. To be stiff or to be soft-the dilemma of the echinoid tooth ligament. II. Mechanical properties. *Biol. Bull.* 190:231-236.
- Birenheide, R. and T. Motokawa. 1996. Contractile connective tissue in crinoids. *Biol. Bull.* 191:1-4.
- Blake, D.B., and T.E. Guensburg. 1993. New Lower and Middle Ordovician stelleroids (Echinodermata) and their bearing on the origins and early history of the stelleroid echinoderms. *Journal of Paleontology*, 67:103-

- Blake, D.B. 1993. A new asteroid genus from the Jurassic of England and its functional significance. *Paleontology*, 36:147-154.
- Blake, D.B., and D.O. Peterson. 1993. An unusual new asteriid (Echinodermata: Asteroidea) from the Cretaceous of California. *Journal of Paleontology*, 67:586-589.
- Blake, D.B. 1994. Re-evaluation of the Palasteriscidae Gregory, 1900, and the early phylogeny of the Asteroidea (Echinodermata). *Journal of Paleontology*, 68:123-134.
- Blake, D.B., and K. Sturgeon. 1995. Aldebarania arenitea, a new genus and species of Astropectinidae (Asteroidea; Echinodermata) from the Maastrichtian (Upper Cretaceous) Peedee Formation of North Carolina. *Journal of Paleontology*, 69:376-380.
- Blake, D.B. 1995. A new asteroid genus from the Carboniferous of Ireland and its phylogenetic and functional significance. *Irish Journal of Earth Sciences*, 14:65-80.
- Blake, D.B., G. Breton, and S. Gofas. 1996. A new genus and species of Asteriidae (Asteroidea; Echinodermata) from the Upper Cretaceous (Coniacian) of Angola, Africa. *Paläontologische Zeitschrift*, 70:181-187.
- Blake, D.B. 1996. Redescription and interpretation of the asteroid species Tropidaster pectinatus from the Jurassic of England. *Palaeontology*, 39:179-188.
- Blake, D.B. 1996. Fossils explained 18: starfishes. *Geology Today*, 12(6):230-235.
- Blake, D.B., and J. Sprinkle. 1996. Astrocratis acutispina, new genus and species, a new asteroid from the Late Cretaceous of Texas. *Eclogae Geologicae Helvetiae*, 89:1311-1320.
- Blanchard, A. and H.M. Feder. 1997. Reproductive timing and nutritional storage cycles of Mytilus trossulus Gould, 1850, in Port Valdez, Alaska, site of a marine oil terminal. *Veliger*, 40: 121-130.
- Bodenbender, B.E., and W.I. Ausich. 1996. Orientations of crystallographic axes of skeletal elements of Ordovician Crinoids [abstract]. North American Paleontological Convention: 39.
- Borgne, A. and Meijer, L., 1996. Sequential dephosphorylation of p34cdc2 on its Thr-14 and Tyr-15 residues at the prophase/metaphase transition. *J. Biol. Chem.* 271:27847-27854.
- Borzone, C.A., Y.A.G. Tavares, and C.R. Soares. Adaptagco morfolsgica de Mellita quinquiesperforata (Leske, 1778) para explorar ambientes com alto hidrodinamismo. *Iheringia, Ser. Zoologia, Porto Alegre.* (in press).
- Boudouresque, C.F., C. Rodriguez-Prieto and F. Arrighi. 1994. Place de l'espèce de Caulerpa indigène de Méditerranée, Caulerpa prolifera, dans les préférences alimentaires de l'oursin Paracentrotus lividus. First International Workshop on Caulerpa taxifolia, in Boudouresque, C.F., A. Meinesz, A., Gravez, V. édit., GIS Posidonie publ., Fr.:233-237.
- Boudouresque, C.F. and R. Lemee. 1994. Effet des métabolites secondaires de l'algue Caulerpa taxifolia sur le comportement de l'oursin Paracentrotus lividus. Table ronde internationale - Interactions biotiques au cours des phases larvaire et adulte des invertébrés marins benthiques, Villefranche-sur-mer, 19-23 Septembre 1994, L. Fenaux, organisatrice. Abstract.
- Boudouresque, C.F., R. Lemee, X. Mari, and A. Meinesz. 1996. The invasive alga Caulerpa taxifolia is not a suitable diet for the sea-urchin Paracentrotus lividus. *Aquat. Bot.*, 53:245-250.
- Bourseau, J.P., J. David, M. Roux, D. Bertrand, and V. Clochard. (in press). Une nouvelle espèce du genre Balanocrinus (Crinoides pédonculés)

- provenant du Kimméridgien inférieur des environs de La Rochelle (Charente maritime, France). Géobios, Lyon, 3 pl., 4 fig.
- Breton, G. 1996. Les pédicellaires alvéolaires sont-ils arrivés chez les Goniasteridae (Echinodermata: Asteroidea) au Crétacé par voie épidémique? Bull. Soc. Zool. France 121(1):87-92.
- Breton, G. (in progress). Deux étoiles de mer du Bajocien du nord-est du bassin de Paris (France): leurs alliés actuels sont des fossiles vivants.
- Breton, G., and D. Vizcaino. (submitted). Astérides (Echinodermata) de l'Herdien moyen (Yprésien) des Corbières (Aude, France): systématique, relations paléobiogéographiques et évolutives. Bull. Soc. Et. Sci. Aude.
- Broadhead, T.W. and M.A. Gibson. 1996. Late Silurian sedimentary environments and biotas of west-central Tennessee. In: T.W. Broadhead (ed.), Sedimentary Environments of Silurian Taconia: University of Tennessee Studies in Geology 26:1-30.
- Brower, J.C. 1996. Growth and functional morphology of Pleurocystites squamosus Billings, an Ordovician rhombiferan echinoderm. The Paleontological Society Special Publication No. 8, p.48.
- Brower, J.C. 1996. Carabocrinid crinoids from the Ordovician of northern Iowa and southern Minnesota. Journal of Paleontology 70:614-631.
- Brower, J.C. 1996. In conjunction with C.R. Newton and W.B. Newman. Quantitative paleoecology of a transition from basinal black shale to shelf siltstone: upper part of Marcellus Formation (Hamilton Group, central New York). Palaeogeography, Palaeoclimatology, Paleoecology. (in press).
- Brower, J.C. 1996. Seriation of an original data matrix as applied to biostratigraphy. Commemorative Volume in honor of Professor B.K. Sahu. (in press).
- Brower, J.C. 1996. Homocrinid crinoids from the Upper Ordovician of northern Iowa and southern Minnesota. Journal of Paleontology. (in press).
- Bryan, P.J., J.B. McClintock, and T.S. Hopkins. 1997. Structural and chemical defenses of echinoderms from the northern Gulf of Mexico. Journal of Experimental Marine Biology and Ecology, 210:173-186.
- Byrne, M., and A. Cerra. Evolution of intragonadal development in the diminutive asterinid sea stars Patiriella vivipara and P. parvivipara with an overview of development in the Asterinidae. Biol. Bull., 191:17-26.
- Campos-Creasey, L.S., P.A. Tyler, J.D. Gage, and A.W.G. John. 1994. Evidence for coupling the vertical flux of phytodetritus to the diet and seasonal life history of the deep-sea echinoid Echinus affinis. Deep-Sea Research 1, 41(2):369-388.
- Carnevali, M.D.C., F. Bonasoro, E. Lucca, and M.C. Thorndyke. 1995. Pattern of cell proliferation in the early stages of arm regeneration in the feather star Antedon mediterranea. Journal of Experimental Zoology, 272:464-474.
- Carnevali, M.D.C., F. Bonasoro, R. Invernizzi, E. Lucca, U. Welsch, and M.C. Thorndyke. 1996. Tissue distribution of monoamine neurotransmitters in normal and regenerating arms of the feather star Antedon mediterranea. Cell and Tissue Research 285:341-352.
- Carroll, A.K., and J.M. Shick. 1996. Dietary accumulation of mycosporine-like amino acid (MAAs) by the green sea urchin (Strongylocentrotus droebachiensis). Marine Biology, 124:561-569.
- Clough, L.M., W.G. Ambrose, C.J. Ashjian, D. Piepenburg, P.E. Renaud, and S.L. Smith. (in press). Meroplankton abundance in the Northeast Water Polynya: Insights from oceanographic parameters and benthic abundance



- patterns. J. Mar. Syst.
- Cutress, B.M. 1996. Changes in dermal ossicles during somatic growth in Caribbean littoral sea cucumbers (Echinodermata: Holothuroidea, Aspidochirotida). Bull. Mar. Sci. 58(1): 44-116.
- Davoult, D., and F. Gounin. 1995. Suspension-feeding of a dense Ophiothrix fragilis (Abildgaard) population at the water-sediment interface: time coupling of food availability and the feeding behaviour of the species. Estuar. Coast. Shelf Sci., 41:567-577.
- Davoult, D. 1995. Etude du peuplement des cailloutis du détroit du pas de Calais (France): du descriptif au fonctionnel. Bull. Soc. Zool. France, 120 (1):67-72.
- Davoult, D., and F. Gounin. 1995. Nitrogen excretion of a dense population of Ophiothrix fragilis (Abildgaard): roles in the exchanges at the water-sediment interface. In: Echinoderm Research 1995, Emson, Smith and Campbell (eds.), Balkema, Rotterdam: 65-69.
- DiCarlo, M., D.P. Romancino, G. Ortolani, G. Montana, and G. Giudice. (in press). Molecular mechanisms for the establishment of the animal-vegetal axis in sea urchin development. Rend. Fis. Acc. Lincei.
- Dolmatov, I.Yu. 1996. Fission, evisceration, and regeneration in holothurians. Russian J. Develop. Biol., 27(4):245-255.
- Dolmatov, I.Yu., M.G. Eliseikina, A.A. Bulgakov, T.T. Ginanova, N.E. Lamash, and V.P. Korchagin. 1996. Muscle regeneration in the holothurian Stichopus japonicus. Roux's Arch. Develop. Biol., 205: 486-493.
- Dolmatov, I.Yu., and M.G. Eliseikina. Regeneration of the longitudinal muscle bands in juvenile holothurians. (in press).
- Donovan, S.K. 1996. Fossils explained 15: Palaeozoic crinoids. Geology Today 11 (for 1995):196-199.
- Donovan, S.K. 1996. A regular echinoid from the Walderston Formation (Lower Oligocene) of Jamaica. Caribbean Journal of Science 32:78-82.
- Donovan, S.K. 1996. Testing the marine and continental fossil records: Comment. Geology 24:381.
- Donovan, S.K. 1996. Fossil echinoderms in the Lucas Barrett collection, Geology Museum, University of the West Indies, Mona. Journal of the Geological Society of Jamaica 31:1-5.
- Donovan, S.K. 1996. Use of the SEM in interpreting acient faunas of sea urchins. Microscopy and Analysis (UK edition), #54 (July):35.
- Donovan, S.K., and B.J. Embden. 1996. Early Pleistocene echinoids of the Manchioneal Formation, Jamaica. Journal of Paleontology 70:485-493.
- Donovan, S.K., C.V. Milsom, and C.J. Veltkamp. 1996. Jamaican Cretaceous Crinoidea. Journal of Paleontology 70:866-871.
- Donovan, S.K., C.R.C. Paul, D.N. Lewis. 1996. Echinoderms. In: D.A.T. Harper, and A.W. Owen (eds.), Fossils of the Upper Ordovician. Paleontological Association Field Guides to Fossils 7:202-267, 277-294.
- Donovan, S.K., R.W. Portell. 1996. Clypeaster lamprus H.L. Clark (Echinodermata, Echinoidea) in the Manchioneal Formation (early Pleistocene) of Jamaica. Caribbean Journal of Science, 32:83-88.
- Donovan, S.K., and C. Veale. 1996. The irregular echinoids Echinoneus Leske and Brissus Gray in the Cenozoic of the Antillean region. Journal of Paleontology 70:632-640.
- Drummond, A.E. 1995. Reproduction of the sea urchins, Echinometra mathaei and Diadema savignyi on the South African east coast. Journal of Marine and Freshwater Research 46:751-765.
- Eble, G. J. 1996. Developmental and non-developmental morphospaces in evolutionary paleobiology. In J. E. Repetski (ed.): Sixth North American Paleontological Convention Abstracts of Papers. The Paleontological

- Society Special Publication Number 8, p. 111.
- Eble, G. J. 1996. Contrasting morphological diversification in sister clades: holasteroid and spatangoid echinoids in the Mesozoic. Geological Society of America Meeting Abstracts 28(7): A-292.
- Eble, G. J. 1997. The role of development in evolutionary radiations. In M.L. McKinney (ed.): Biodiversity Dynamics: Turnover of Populations, Taxa and Communities. New York, Columbia University Press. (in press).
- Eble, G.J. 1997. Animal evolution. In: McGraw-Hill 1998 Yearbook of Science and Technology. New York, McGraw-Hill. (in press).
- Elanganayagam, P., V.K. Ganesalingam, and K. Sachithanathan. 1980. Nutritional composition of some raw Sri Lankan holothurians. Proc. Sri Lan. Ass. Adv. Sci. 36(1):61-62.
- Elanganayagam, P., V.K. Ganesalingam, and K. Sachithanathan. 1981. Studies on taxonomy and ecology of the holothurians in Jaffna lagoon. Proc. Sri Lan. Ass. Adv. Sci. 37(1):44.
- Elanganayagam, P., M. Mahendran, S.R. Keishnarajah, V.K. Ganesalingam, and K. Sachithanathan. 1982. Estimation of saponin content of some Sri Lankan holothurians. Proc. I. Chem. Ceylon. 11(1):5.
- Eliseikina, M.G., A.A. Bulgakov, E.L. Nazarenko, V.A. Zubkov, and I. Yu. Petrova. 1997. Distribution of the mannan-binding Lectin 32 kDa in the tissues of the Far East holothurian Stichopus japonicus. Biol. Bull. (in press).
- Eliseikina, M.G., and N.L. Leibson. 1996. Ultrastructure of the gut epithelium in the holothurian Cucumaria japonica. Russian J. Marine Biology, 22(2):97-104.
- Ellers, O. and M. Telford. 1996. Advancement mechanics of growing teeth in sand dollars (Echinodermata, Echinoidea): a role for mutable collagenous tissue. Proc. R. Soc. London B, 263:39-44.
- Elphick, M.R., S.J. Newman, and M.C. Thorndyke. 1995. Distribution and action of SALMFamide neuropeptides in the starfish Asterias rubens. Journal of Experimental Biology 198:2519-2525.
- Evdokimov, V.V., I.I. Deridovich, P.A. Motavkin, G.I. Victorovskaya, V.S. Hotimchenko. 1996. Biotechnology of obtaining of the sex cell of marine bivalva molluscs and echinoderms. In: Advances in marine biotechnology. Vol. 1, p.78, Oxford IBM Publishing.
- Evdokimov, V.V. 1996. Reproduction of sea urchins and Japanese scallop in Japan Sea coastal communities. J. Ontogenesis.
- Evdokimov, V.V. 1997. Ontogenesis of sea urchins in artificial and natural conditions. Dep. in UREPA (in press).
- Evdokimov, V.V. 1996. Seasonal characteristic of sea urchins spermatogenesis. Dep. in UREPA (in press).
- Flammang, P., and G. Walker. (in press). Measurement of the adhesion of the podia in the asteroid Asterias rubens (Echinodermata). J. Mar. Biol. Assoc., U.K.
- Flammang, P., P. Gosselin, and M. Jangoux. (in press). The podia, organs of adhesion and sensory perception in larvae and postmetamorphic stages of the echinoid Paracentrotus lividus (Echinodermata). Biofouling.
- Foltz, D.W., J.P. Breaux, E.L. Campagnaro, A.E. Himel, A.W. Hrinkevich, J.W. Tamplin, and W.B. Stickle. 1996. Limited morphological differences between genetically identified cryptic species within the Leptasterias species complex (Echinodermata: Asteroidea). Can. J. Zool. 74:1275-1283.
- Foltz, D.W., W.B. Stickle, E.L. Campagnaro, and A.E. Himel. 1996. Mitochondrial DNA polymorphisms reveal additional genetic heterogeneity within the Leptasterias hexactis (Echinodermata: Asteroidea) species complex. Mar. Biol. 125:569-578.



- Foster, G.G., and A.N. Hodgson. 1996. Feeding, tentacle and gut morphology in five species of southern African intertidal holothuroids (Echinodermata). South African Journal of Zoology, 31(2):70-79.
- Fujita, T. 1996. Bathymetric distribution of ophiuroids (Echinodermata) off Sendai Bay, northern Japan, with notes on the diet of the roughscale sole Clidoderma asperrium (Pisces, Pleuronectidae). Mem. Natn. Sci. Mus., Tokyo, 29:209-222.
- Fujita, T., Ishida, Y., Irimura, S. 1997. Ophiuroids collected from the deep waters of Suruga Bay, central Japan. National Science Museum Monographs, No. 12:257-268, 1 pl.
- Gage, J.D. 1995. Demographic modelling in the analysis of population dynamics of deep-sea macrobenthos. Internationale Revue der Gesamten Hydrobiologie 80(2):171-185.
- Ganteaume, A., J. Gobert, P. Malestroit, V. Menager, C. F. Boudouresque. 1996. Consommation journalière et taux d'absorption chez l'oursin Paracentrotus lividus nourri avec l'algue Caulerpa taxifolia: variations saisonnières et effet d'accoutumance. Second International Workshop on Caulerpa taxifolia, in Ribera, M.A., Ballesteros, E., Boudouresque, C.F., Gomez, A., Gravez, V. edit., Univ. Barcelona publ., Spain:297.
- Garrett, K., Mladenov, P.V., and Wallis, G. Evidence of amictic reproduction in the brittle star Ophiomyxa brevirma. Marine Biology (in press).
- Gebruk A.V., P.A. Tyler, and D.S.M. Billett. (in press, 1997). New records and review of pelagic juveniles of the deep-sea elasipodid holothurians. Ophelia.
- Gebruk, A.V. (in press, 1997). New species of the deep-sea holothurian family Elpidiidae Theel, 1879. Zoosystema.
- George, S.B. 1996. Echinoderm egg and larval quality as a function of adult nutritional state. Oceanologica Acta 19:297-308.
- George, S.B., C.M. Young, and L. Fenaux. (in press). Proximate composition of eggs and larvae of the sand dollar Encope michelini - the advantage of higher investment in planktotrophic eggs. Invert. Reprod. Develop.
- Ghyoot, M., J.L.S. Cobb, and M.C. Thorndyke. 1994. Localization of neuropeptides in the nervous system of the brittle star, Ophiura ophiura. Philosophical Transactions of the Royal Society London B, 346:433-444.
- Gibson, M.A., and A. Hous. (in press). Treasures in the Creek Bed: Tennessee Conservationist.
- Gil Cid, M.D. and P. Domínguez. 1995. Gyrocystis cruzae, nueva especie de equinodermo Cincta del Cámbrico Medio de Asturias. Boletín Geológico y Minero, 4:517-531.
- Gil Cid, M.D., P. Domínguez, M. Escribano, and E. Silván. 1996. Un nuevo Rombífero, Homocystites geyeri n. sp., en el Ordovícico de El Viso del Marqués (C. Real). Geogaceta 20(1):235-238.
- Gil Cid, M.D., P. Domínguez, E. Silván, and M. Escribano. 1996. Bohemiaecystis jefferiesi n. sp.; primer Cornuta para el Ordovícico español. Estudios Geológicos 52(5-6):313-326.
- Gil Cid, M.D., P. Domínguez, M.C. Cruz, and M. Escribano. 1996. Macrocystellidae para el Ordovícico Superior español. Estudios Geológicos 52(3-4):175-183.
- Gil Cid, M.D., P. Domínguez, M.C. Cruz, and M. Escribano. 1996. Primera cita de un Blastoideo Coronado en el Ordovícico Superior de Sierra Morena Oriental. Revista de la Sociedad Geológica de España, 9(3-4):253-267.
- Gil Cid, M.D., and P. Domínguez. 1995. Presencia de Gyrocystis Jaekel, 1918 en el Cámbrico Medio de Zafra (Badajoz). Revista de la Sociedad

- Geológica de España, 8(1-2):99-110.
- Gil Cid, M.D., P. Domínguez, M. Escribano, and M.C. Cruz. 1996. Una paleoasociación del Ordovícico superior de Sierra Morena Oriental: equinodermos y cordados. IX Simposio Ibérico de Estudios del Bentos Marino (eds., J.M. Vieitez and J. Junoy). pp. 342-343. Alcalá de Henares.
- Ginanova, T.T. 1997. DNA-synthesizing activity in holothurian muscle regeneration. Russian J. Develop. Biol. (in press).
- Giudice, G. 1996. Molecular mechanisms in developmental biology. Cell Biology International 20(1):29-32.
- Gongadze G. 1996. The Caucasian echinoids on the Maastrichtian and Danian boundary. Bull. acad. Sci. Georgia, 154(3).
- Gounin, F., D. Davoult, and A. Richard. 1995. Role of a dense bed of Ophiothrix fragilis (Abildgaard) in the transfers of heavy metals at the water-sediment interface. Mar. Poll. Bull., 30:736-741.
- Graeve, M., G. Kattner, and D. Piepenburg. (in press). Lipids in Arctic benthos: Does the fatty acid and alcohol composition reflect feeding and trophic interactions? Polar Biol.
- Grignard, J.-C., P. Flammang, D.J.W. Lane, and M. Jangoux. (in press). Distribution and abundance of Diadema setosum (Echinodermata, Echinoidea) on the sediment-stressed coral reefs of Singapore. Asian Marine Biology.
- Grosjean, P., C. Spirlet, and M. Jangoux. 1996. Experimental study of growth in the echinoid Paracentrotus lividus (Lamarck, 1816) (Echinodermata). JEMBE 201:173-184.
- Grygier, M.J. 1996. A world-list of coral reef-associated Ascothoracida (Crustacea), with remarks on Lauridae, Petrarciidae, and Dendrogastriidae from Okinawa, Japan. Galaxea 13(1):15-33. [Dendrogaster ludwigi, endoparasite of Echinaster luzonicus].
- Grygier, M.J. (submitted). Myzostomida. In: C. Glasby and A. Wells (eds.) Fauna of Australia. Vol. 4. Annelida through Urochordata. Australian Biological Resources Study, Canberra. (3 co-authored manuscript on myzostomida submitted to various journals).
- Hagdorn, H., and T.K. Baumiller. 1996. The distribution and morphology of Holocrinus, the earliest post-Paleozoic crinoid. 9th International Echinoderm Conference, San Francisco, Aug. 1996 Prog. and Abs., p. 64.
- Hagen, N.T. 1996. Echinoculture: from fishery enhancement to closed cycle cultivation. World Aquaculture, December 1996: 7-19.
- Hamel, J.-F., and A. Mercier. 1996. Early development, settlement, growth and spatial distribution of the sea cucumber Cucumaria frondosa (Echinodermata: Holothuroidea). Canadian Journal of Fisheries and Aquatic Sciences 53:253-271.
- Hamel, J.-F., and A. Mercier. 1996. Evidence of chemical communication during the gametogenesis of holothuroids. Ecology 77(5):1600-1616.
- Hamel, J.-F., and A. Mercier. 1996. Gamete dispersion and fertilization success of the sea cucumber Cucumaria frondosa. Beche-de-mer Bulletin 8:34-40.
- Hamel, J.-F., and A. Mercier. 1996. Gonad morphology and gametogenesis of the sea cucumber Cucumaria frondosa. Beche-de-mer Bulletin 8:22-33.
- Harvey, E.W., and W.I. Ausich. 1996. Stratocladistic analysis of phylogeny in calceocrinid crinoids (Paleozoic: Echinodermata): Mosaic evolution and biogeography [abstract]. North American Paleontological Convention: 164.
- Haude, R. 1997. Nudicorona n.g., eine paläozoische Holothurie mit nicht oder kaum skelettierter Körperwand. - Fossilien 1: 50-57, 6 Abb. (in press).
- Haude, R. 1996. Fluchtversuche verschütteter Holothurien in einer unterdevonischen Echinodermen-Taphozönose. - 66. Tagung Pal. Ges.,

- Abstr., Terra Nostra, 6: p.48 (Leipzig).
- Haude, R. 1996. Echinodermen-Taphozönosen im Unter-Devon der argentinischen Präkordillere. - 15. Geowiss. Lateinamer.- Koll., Abstr., Terra Nostra, 8: p.59 (Hamburg).
- Hendler, G. 1996. Class Crinoidea. pp.85-95. *In: Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14. Miscellaneous Taxa.* (ed. J.A. Blake, P.F. Scott, and A. Lissner). Santa Barbara Museum of Natural History, Santa Barbara, California.
- Hendler, G. 1996. Class Ophiuroidea. pp.113-179. *In: Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 14. Miscellaneous Taxa.* (ed. J.A. Blake, P.F. Scott, and A. Lissner). Santa Barbara Museum of Natural History, Santa Barbara, California.
- Hess, H., and D.B. Blake. 1996. Coulonia platyspina n. sp., a new sea star from the Lower Cretaceous of Morocco. *Eclogae Geologicae Helvetiae*, 88:778-788.
- Holterhoff, P., and Baumiller, T.K. 1996. Phylogeny of the proto-articulates (ampelocrinids and basal articulates): implications for the Permo-Triassic extinction and re-radiation of the Crinoidea. Sixth North American Paleontological Convention. Abs. Progs.
- Jaekle, W.B., and E.J. Balser. 1996. Coelomic and blastocoelic circulation in planktotrophic larvae of asteroid echinoderms. *A. Zool.* (in press).
- Jagt, J.W.M. 1996. Late Maastrichtian and Early Palaeocene index macrofossils in the Maastrichtian type area (SE Netherlands, NE Belgium). *In: Brinkhuis, H. and J. Smit (eds.). The Geulhemmerberg Cretaceous/Tertiary boundary section (Maastrichtian type area, SE Netherlands).* *Geology Mijnbouw*, 75:153-162.
- Jagt, J.W.M. (in press). Late Cretaceous-Early Palaeogene echinoderms and the K/T boundary in the southeast Netherlands and northeast Belgium - Part 1. Introduction and stratigraphy. *Scripta Geol.* (Leiden).
- Jagt, J.W.M. (in press). Late Cretaceous-Early Palaeogene echinoderms and the K/T boundary in the southeast Netherlands and northeast Belgium - Part 2. Crinoids. *Scripta Geol.* (Leiden).
- Jagt, J.W.M., M.J.M. Deckers, R.W. Dortangs, and M.M.M. Kuypers. 1997. Late Cretaceous echinoderm assemblages from the southeast Netherlands and northeast Belgium. *Zentralblatt Geol. Paläont.*, (1) (in press).
- Jagt, J.W.M., S.K. Donovan, M.J.M. Deckers, R.W. Dortangs, M.M.M. Kuypers, and C.J. Veltkamp. The late Maastrichtian crinoid Dunnocrinus aequalis (d'Orbigny, 1841) from the Maastrichtian type area (SE Netherlands, NE Belgium). *Bull. Inst. r. Sci. nat. Belg., Sci. Terre*, 68 (in press).
- Jagt, J.W.M., W.M. Felder, R.W. Dortangs, and J. Severijns. 1996. The Cretaceous/Tertiary boundary in the Maastrichtian type area (SE Netherlands, NE Belgium); a historical account. *In: Brinkhuis, H., and J. Smit (eds). The Geulhemmerberg Cretaceous/Tertiary boundary section (Maastrichtian type area, SE Netherlands).* *Geol. Mijnbouw*, 75:107-118.
- Jeffery, C.H. 1997. Revision of the echinoid genus Enallopneustes from the Upper Cretaceous of North Africa. *Cretaceous Research* 18:237-248.
- Jeffery, C.H. 1997. All change at the K-T boundary? Echinoids from the Maastrichtian and Danian of the Mangyshlak Peninsula, Kazakhstan. *Palaeontology* 40: (in press).
- Jell, P.A. 1997. Early Carboniferous ophiuroids from Crawfordsville, Indiana. *Journal of Paleontology* (in press).
- Johnsen, S. 1997. Identification and localization of a possible rhodopsin in the echinoderms Asterias forbesi and Ophioderma brevispinum. *Biol.*



- Bull. (in press).
- Johnsen, S. 1997. Damage due to solar ultraviolet radiation in the brittlestar Ophioderma brevispinum (Echinodermata: Ophiuroidea). J. Mar. Biol. Ass., U.K. (in press).
- Juinio-Meñez, M.A.R. and Villanoy. 1995. Sea urchin recruitment studies for management considerations. Proc. of the LIPI-JSPS Joint Seminar in Marine Science; Jakarta, November 15-18, 1994: 15-20.
- Juinio-Meñez, M.A.R., N. Macawaris, and H. Bangi. 1995. Potentials of sea urchin ranching as a resource management strategy. In: Juinio-Meñez, M.A.R. and G.F. Newkirk (eds.) Philippine Coastal Resources under Stress. Selected papers from the Fourth Annual Common Property Conference, Manila, June 16-19, 1993. p.219-228.
- Juinio-Meñez, M.A.R., N.D. Macawaris, and H.P. Bangi. 1994. Effect of time of day and tidal period on the abundance and size structure of Tripneustes gratilla and Salmacis sphaeroides. Proc. of the 2nd National Symposium in Marine Science, Tawi-tawi, Philippines, November 5-7, 1992, p.89-98.
- Kammer, T.W., T.K. Baumiller and W.I. Ausich. (in press). Species longevity as a function of niche breadth: evidence from fossil crinoids. Geology.
- Kammer, T.W., and W.I. Ausich. 1996. Primitive cladid crinoids from the middle Mississippian of the east-central United States. J. Paleont. 70(5):835-865.
- Karentz, D., I. Bosch, and W. Dunlop. 1997. Spatial and temporal occurrence of UV-absorbing mycosporine-like amino acids in tissues of the Antarctic sea urchin, Sterechinus neumayeri, during 1991 springtime ozone depletion. Marine Biology. (in press).
- Kerr, A.M. 1994. Shallow-water holothuroids (Echinodermata) of Kosrae, Eastern Caroline Islands. Pacific Science 48:161-174.
- Klikushin, V. 1996. Jurassic crinoids of the Sudak environs in Crimea. Paleontographica, Abt.A, Bd.238:97-151.
- Klinger, T.S., J.B. McClintock, and S.A. Watts. (in press). Activities of digestive enzymes of polar and subtropical echinoderms. Polar Biology.
- Knoepffler-Peguy, M. and M.J. Nattero. 1996. Comportement de Paracentrotus lividus en présence de la souche de Caulerpa taxifolia du port de St. Cyprien (Fr. Pyr. Or.). Second International Workshop on Caulerpa taxifolia, in Ribera, M.A., Ballesteros, E., Boudouresque, C.F., Gomez, A., Gravez, A. edit., Univ. Barcelona publ., Spain:309-314.
- Kobayashi, N. 1997. Marine ecotoxicology with echinoderm life cycle. In: Microscale Aquatic Toxicology - Advances, Techniques and Practice, (eds.) P.G. Wells, K. Lee and C. Blaise. C.R.C. Lewis Publ., FL, U.S.A.
- Kurihara, T. 1996. Effects of sediment and depth on species composition of starfishes (Asteroidea) in Wakasa Bay, Japan Sea. Benthos Research, 50: 1-10. <in Japanese>
- Kuris, A.M., K.D. Lafferty and M.J. Grygier. 1996. Detection and preliminary evaluation of natural enemies for possible biological control of the northern Pacific seastar, Asterias amurensis. Centre for Research on Introduced Marine Pests, Technical Report (Australia) 3:1-17.
- Lambert, P. 1996. Psolidium bidiscum, a new species of sea cucumber from the northeast Pacific Ocean (Echinodermata: Holothuroidea). Can. J. Zool 74: 20-31.
- Lambert, P. (In press). Sea cucumbers of British Columbia - Including southeastern Alaska and Puget Sound. University of B.C. Press, Vancouver.
- Lane, N.G., and W.I. Ausich. 1995. Interreef crinoid fauna from the Mississinewa shale member of the Wabash Formation (Northern Indian:

- Silurian; Echinodermata). J. Paleont. 69(6):1090-1106.
- Lane, N.G., J.A. Waters, and C.G. Maples. 1997. Echinoderm faunas of the Hongguleleng Formation, Late Devonian (Famennian), Xinjiang-Uygur Autonomous Region, PRC. Paleontological Society Memoir. (in press).
- Lawrence, J.M., J.K. Vasquez, B.D. Robbins, and A. Vega. 1996. Lack of phenotypic plasticity of the body form, Aristotle's lantern and spines of Tetrapyrgus niger (Echinodermata: Echinoidea). Gayana Oceanologica. 4, 93-97.
- Lawrence, J.M., S. Olave, R. Otaiza, A.L. Lawrence, and E. Bustos. 1997. Enhancement of gonad production in the sea urchin Loxechinus albus in Chile fed extruded foods. Journal of the World Aquaculture Society. 28, 91-97.
- Lemee, R., C.F. Boudouresque, X. Mari and A. Meinesz. 1994. Comportement alimentaire de Paracentrotus lividus vis-à-vis de Caulerpa taxifolia introduite en Méditerranée occidentale (étude in vitro). First International Workshop on Caulerpa taxifolia, in Boudouresque, C.F., Meinesz, A., Gravez, V., édit., GIS Posidonie publ., Fr.:239-243.
- Lemee, R., C.F. Boudouresque, X. Mari and A. Meinesz. 1994. Influence d'une nourriture exclusive à base de Caulerpa taxifolia sur la physiologie de Paracentrotus lividus. First International Workshop on Caulerpa taxifolia, in Boudouresque, C.F., Meinesz, A., Gravez, V., édit., GIS Posidonie publ., Fr.:245-249.
- Lemee, R., C.F. Boudouresque, J. Gobert, P. Malestroit, X. Mari, A. Meinesz, V. Menager and S. Ruitton. 1996. Feeding behaviour of Paracentrotus lividus in presence of Caulerpa taxifolia introduced in the Mediterranean. Oceanologica Acta, 19(3-4):245-253.
- Le Menn, J., and N. Spjeldnaes. 1996. Un nouveau crinoïde Dimerocrinitidae (Camerata, Diplobathrida) de l'Ordovicien supérieur du Maroc: Rosfacrinus robustus nov. gen., nov. sp. Geobios 29(3):341-351.
- Le Menn, J. (in press). Crinoïds dévoniens d'Afrique du Nord: révision systématique et affinités paléobiogéographiques du Nord. Ann. Soc. Géol.
- Leslie, S.A., W.I. Ausich, and D.L. Meyer. 1996. Lower Mississippian sedimentation dynamics and conodont biostratigraphy (lowermost Fort Payne Formation) along the southeastern margin of the Eastern Interior Seaway. Southeastern Geology 36(1):27-35.
- Mahaut, M.L., M. Sibuet, and Y. Shirayama. 1995. Weight-dependent respiration rates in deep-sea organisms. Deep-Sea Research 42(9):1575-1582.
- Maran, A. 1996. Urganian echinoid fauna of Mali Izvor (eastern Serbia, Yugoslavia). in press.
- Massin, C. 1996. The holothurians of Easter Island. Bulletin de L'Institut Royal des Sciences Naturelles de Belgique, Biologie 66:151-178.
- Massin, C. 1996. Results of the Rumphius Biohistorical Expedition to Ambon (1990). Part. 4. The Holothuroidea (Echinodermata) collected at Ambon during the Rumphius Biohistorical Expedition. Zoologische Verhandelingen Leiden No. 307:1-53.
- Massin, C., and T. Tomascik. 1996. Two new holothurians (Echinodermata: Holothuroidea) from an anchialine lagoon of an uplifted atoll, Kakaban Island, East Kalimantan, Indonesia. The Raffles Bulletin of Zoology, 44(1):157-172.
- Mayer, M., and D. Piepenburg. 1996. Epibenthic distribution patterns on the continental slope off East Greenland at 75°N. Mar Ecol. Prog. Ser. 143:151-164.
- McClintock, J.B., T. Hopkins, K. Marion, S. Watts, and G. Schinner. 1993. Population structure, growth and reproductive biology of the



- Gorgonocephalid brittlestar Asteroporpa annulata. Bull. Mar. Sci., 52(3):925-936.
- Medeiros-Bergen, D., and E. Miles. 1997. Recruitment in the holothurian Cucumaria frondosa in the Gulf of Maine. Inv. Reprod. Dev., 31:123-133.
- Medeiros-Bergen, D. 1996. On the stereom microstructure in ophiuroid teeth. Ophelia, 45:211-222.
- Meijer, L., Borgne, A., Mulner, O., Chong, J.P.J., Blow, J.J., Inagaki, N., Inagaki, M., Delcros, J.G. and Moulinoux, J.P., 1997. Biochemical and cellular effects of roscovitine, a potent and selective inhibitor of the cyclin-dependent kinases cdc2, cdk2 and cdk5. Eur. J. Biochem., in press.
- Meijer, L., 1996. Chemical inhibitors of cyclin-dependent kinases. Trends in Cell Biology 6, 393-397.
- Meijer, L., 1995. Chemical inhibitors of cyclin-dependent kinases. Progress in Cell Cycle Research, (Meijer, L., Guidet, S., and Tung, H.Y.L., editors), vol. 1, Plenum Press, New York, 351-363.
- Melikov, O.H., and E.S. Poretzkaya. Once more to the question of genus Conoclypus (Thesis of Echinodermata, VI all union symposium) SA of USSR and Estonia Tallinn, 1987, p.62-63
- Melikov, O.H. The Cretaceous fauna of Azerbaijan "ELM". Baku 1988 (monog.) Sea urchin. Upper Cretaceous pp.184-214 , Taf.1-15
- Melikov, O.H. Morphological peculiarity of the new species of the genus Heteraster Orbigny, 1853 (Echinoidea) from the Urganian facies of Azerbaijan. Fossil and recent Echinoderm researches, 1989, Tallinn. pp.156-160. Academy of Sciences of the Estonian USSR, Institute of Geology.
- Menager, V., L. Puddy and C.F. Boudouresque. 1995. The daily intake and degree of absorption of the sea-urchin Paracentrotus lividus fed upon Caulerpa taxifolia (Chlorophyta), Cystoseira compressa and Halopteris scoparia (Fucophyceae). Rapp. Commiss. internation. Mer Médit., Monaco, 34:36.
- Messing, C.G. 1995. Redescription of a unique feather star (Echinodermata: Crinoidea: Comasteridae) with the diagnosis of a new genus. Proc. Biol. Soc. Washington, 108(4):656-661.
- Messing, C.G. 1995. Alloeocomatella, a new genus of reef-dwelling feather star from the tropical Indo-West Pacific (Echinodermata: Crinoidea: Comasteridae). Proc. Biol. Soc. Washington, 108:436-450.
- Meyer, D.L., W.I. Ausich, D.T. Bohl, W.A. Norris, and P.E. Potter. 1995. Carbonate mud-mounds in the Fort Payne Formation (lower Carboniferous), Cumberland Saddle region, Kentucky and Tennessee, USA. Spec. Publs int. Ass. Sediment., 23:273-287.
- Migné, A., and D. Davoult. 1995. Multi-scale heterogeneity in a macrobenthic epifauna community. Hydrobiologia, 300/301: 375-381.
- Migné, A., and D. Davoult. 1995. Rôle des organismes suspensivores dans les transferts pélagobenthiques d'une zone de fort hydrodynamisme: approche expérimentale. J. Rech. Océanogr., 20:9-14.
- Migné, A., and D. Davoult. 1997. Carbon-dioxide production and metabolic parameters in the ophiurid Ophiothrix fragilis. Mar. Biol., 127:699-704.
- Migné, A., and D. Davoult. 1997. Distribution quantitative de la macrofaune benthique du peuplement des cailloutis dans le détroit du Pas de Calais (Manche orientale, France). Oceanol. Acta, 20:453-460.
- Mironov, A.N. 1996. Holasteroid echinoids. 3. Helgocystis and a new genus Rictocystis. Zoologicheskyy Zhurnal, 75(8):1109-1119.
- Mitrović-Petrović, J. 1996. Cretaceous echinoids from Djevel Djerissa, central Tunisia. Ann. Geol. de la Penins. Balk, 60:169-194.
- Mitrović-Petrović, J., and A. Maran. 1995. The significance of Cretaceous

- echinoids for an attempt at reconstruction of the paleoenvironment of Carpatho-Balkanides (Yugoslavia). XV Congress of the Carp.-Balk. Geol. Assoc. Spec. pub. of the Geol. Soc. of Greece, 4/1:243-247.
- Mitrović-Petrović, J., O. Spajić, and M. Dimić. 1997. Paleoeecological characteristics and taphonomic analysis of middle Miocene fauna from the area of Ulcinj. (in press).
- Mitrović-Petrović, J., and A. Maran. 1996. The palaeoecological characteristics of Barremian-Aptian Echinoidea of eastern Serbia (Yugoslavia). in press.
- Mitrović-Petrović, J., and A. Maran. 1996. Morphological characteristics of the genus Heteraster (Echinoidea) as indicators of behavior and living conditions. (in press).
- Monteiro, A.M. Gouveia. 1990. Ocorrência de Amphipholizona delicata Clark, 1915 no litoral do estado de São Paulo (Echinodermata - Ophiuroidea). Rev. Brasil. Biol., 50(3):735-738.
- Monteiro, A.M. Gouveia, and E.V. Pardo. 1994. Dieta alimentar de Astropecten marginatus e Luidia senegalensis (Echinodermata - Asteroidea). Rev. Brasil. Biol., 54(1):49-54.
- Monteiro, A.M. Gouveia, and L.R. Tommasi. 1983. Ophiuroidea das regiões Antártica e subantártica. 1. Sobre três espécies de Gorgonocephalidae e Ophiacanthidae. Bolm. Inst. oceanogr., S Paulo 32(1):33-54.
- Monteiro, A.M. Gouveia, and L.R. Tommasi. 1983. Ophiuroidea das regiões Antártica e subantártica. 2. Variação em Gorgonocephalus chilensis (Philippi) (Echinodermata, Ophiuroidea, Gorgonocephalidae). Bolm. Inst. oceanogr., S Paulo 32(1):33-54.
- Monteiro, A.M. Gouveia, M.O. Reis, and E.V. Pardo. 1992. Morfologia comparativa e distribuição batimétrica de duas espécies de Ophiuroidea, na região costeira de Ubatuba. Bolm. Inst. oceanogr., S Paulo 40(1/2):39-53.
- Mooi, R., and B. David. 1996. Phylogenetic analysis of extreme morphologies: deep-sea holasteroid echinoids. Journal of Natural History, 30:913-953.
- Moss, C., R.D. Burke, and M.C. Thorndyke. Immunocytochemical localization of the neuropeptide S1 and Serotonin in larvae of the starfish Pisaster ochraceus and Asterias rubens. Journal of the Marine Biological Association of the United Kingdom 74:61-71.
- Néraudeau, D., J. Thierry, and P. Moreau. 1997. Biodiversité des échinides en fonction des transgressions/régressions: exemples au Jurassique moyen et au Crétacé supérieur. Bull. Soc. géol. Fr., T. 168, n° 1 (in press).
- Newman, S.J., and M.C. Thorndyke. 1994. Localisation of gamma aminobutyric acid (GABA)-like immunoreactivity in the echinoderm Asterias rubens. Cell and Tissue Research 278:177-185.
- Newman, S.J., M.R. Elphick, and M.C. Thorndyke. 1995. Tissue distribution of the SALMFamide neuropeptides S1 and S2 in the starfish Asterias rubens using novel monoclonal and polyclonal antibodies II. Digestive system. Proceedings of the Royal Society London B, 261:187-192.
- Newman, S.J., M.R. Elphick, and M.C. Thorndyke. 1995. Tissue distribution of the SALMFamide neuropeptides S1 and S2 in the starfish Asterias rubens using novel monoclonal and polyclonal antibodies I. Nervous and locomotory systems. Proc. Roy. Soc. London B, 261:139-145.
- Nichols, D., and P.V. Mladenov. 1996. An annual gametogenic cycle for the comatulid crinoid Oxycomanthus plectrophorum (H.L. Clark) from the Fiordland area of New Zealand. Echinoderm Research 1995, ed. R. Emson, A. Smith and A. Campbell. Rotterdam: Balkema, pp.305-312.
- Nichols, D. 1996. Evidence for a sacrificial response to predation in the

- reproductive strategy of the comatulid crinoid Antedon bifida from the English Channel. *Oceanologica Acta* 19(3):237-240.
- Nilsson, H.C., and R. Rosenberg. 1994. Hypoxic response of two marine benthic communities. *Marine Ecology Progress Series* 115:209-217.
- Nilsson, H.C., and M. Sköld. Arm regeneration and spawning in the brittle star Amphiura filiformis (O.F. Müller) during hypoxia. 1996. *Journal of Experimental Marine Biology and Ecology* 199:193-206.
- Pabian, R.K. 1995. Crinoid Assemblage from the Barnsdall Formation, Late Pennsylvanian (Missourian) Washington County, Oklahoma. In Abstracts with Programs, The Geological Society of America, 29th Annual North Central/South Central Section Meeting, April 27-28, 1995, University of Nebraska, Lincoln, v. 27, no. 3, p. 78. With Dan Mosher, Ronald Lewis and Peter Holterhoff.
- Pabian, R.K. 1996. Crinoids from the Haynies Limestone Bed, Ervine Creek Limestone Member, Deer Creek Formation (Late Pennsylvanian, Virgilian), Cass County, Nebraska. *Proceedings, Nebraska Academy of Sciences*, 116th Annual Meeting, Nebraska Wesleyan University, Lincoln, Nebraska, April 26, 1996, p. 48.
- Parma, S.G. 1996. Equinoideos del límite Cretácico Paleógeno en el occidente de la provincia de La Pampa, Argentina. *Ameghiniana* 33 (2):227-235, Buenos Aires.
- Pedrotti, M.L., B. Marchi and R. Lemee. 1996. Effects of Caulerpa taxifolia secondary metabolites on the embryogenesis, larval development and metamorphosis of the sea urchin Paracentrotus lividus. *Oceanologica Acta*, 19(3-4):255-262.
- Pedrotti, M.L., L. Fenaux, B. Marchi, A.M. Corre and R. Lemee, P. Amade and D. Pesando. 1996. Effets des métabolites secondaires de l'algue verte Caulerpa taxifolia sur l'embryogénèse, la phase larvaire et la métamorphose de l'oursin Paracentrotus lividus. Second International Workshop on Caulerpa taxifolia, in Ribera, M.A., Ballesteros, E., Boudouresque, C.F., Gomez, A., Gravez, V. edit., Univ. Barcelona publ., Spain:287-296.
- Pérez, M.G., A. Roccatagliata, M.S. Maier, A.M. Seldes, and J.M. Diaz de Astarloa. 1996. Main sterols from the echinoid Encope emarginata. *Biochem. Syst. Ecol.*, 24:115-118.
- Petr, V., R.J. Prokop, M. Mihaljevič, O. Šebek, and F. Buzek. 1997. Chemical composition of the crinoid skeletal remains (Echinodermata) in the weathered limestones of the Bohemian Lower Devonian (Barrandian area). *Journal of the Czech Geological Society* 42. (in press).
- Piepenburg, D., N.V. Chernova, C.F. v Dorrien, J. Gutt, A.V. Neyelov, L. Saldanha, and M.K. Schmid. 1996. Megabenthic communities in the waters around Svalbard. *Polar Biol.* 16:431-446.
- Piepenburg, D., and M.K. Schmid. 1996. Brittle star fauna (Echinodermata: Ophiuroidea) of the Arctic northwestern Barents Sea: Composition, abundance, biomass and spatial distribution. *Polar Biol.* 16:383-392.
- Piepenburg, D., and M.K. Schmid. 1996. Distribution, abundance, biomass and mineralization potential of the epibenthic megafauna of the Northeast Greenland shelf. *Mar. Biol.* 125:321-332.
- Piepenburg, D., W.G. Ambrose, A. Brandt, P.E. Renaud, M.J. Ahrens, and P. Jensen. (in press). Benthic community patterns reflect water column processes in the Northeast Water polynya (Greenland). *J. Mar. Syst.*
- Piepenburg, D., and M.K. Schmid. (in press). A photographic survey of the epibenthic megafauna of the Arctic Laptev Sea shelf: Distribution, abundance, and estimates of biomass and organic carbon demand. *Mar. Ecol. Prog. Ser.*



- Piepenburg, D., J. Voü, J. Gutt. (in press). Assemblages of sea stars (Echinodermata: Asteroidea) and brittle stars (Echinodermata: Ophiuroidea) in the Weddell Sea (Antarctica) and off Northeast Greenland (Arctic): A comparison of diversity and abundance. *Polar Biol.*
- Pigarra, J.M., and J. Le Menn. 1996. Ocorencia de crinoides em marmores do complexo vulcano-sedimentar carbonatado de estremo = implicações estratigraficos. *Commun. Inst. Geol. e Mincizo* 80:15-25 (issued late 1995).
- Podolsky, R.D. and R.R. Strathmann (1996). Evolution of egg size in free-spawners: consequences of the fertilization-fecundity tradeoff. *The American Naturalist* 148(1):160-173.
- Portell, R.W., and C.W. Oyen. 1997. Occurrence of the regular sea urchin Eucidaris tribuloides from the Tamiami Formation (Pliocene) of Florida. *Tulane Studies in Geology and Paleontology*. (in press).
- Price, A.R.G. and F.W.E. Rowe. 1996. Indian Ocean echinoderms collected during the 'Sinbad Voyage' (1980-81): 3. Ophiuroidea and Echinoidea. *Bull. nat. Hist. Mus. London (Zool)*. 62(2):71-82.
- Prokop, R.J., V. Petr. 1995. Synchiocrinus cf. hanusi Prokop, 1970 from the Koněprusy Limestone (Lower Devonian, Barrandian, Bohemia). *Journal of the National Museum, Natural History Series* 164(1-4):75-76, text-fig. 1. Praha.
- Prokop, R.J., and V. Petr. 1995. New finds of isolated cup plates of the crinoid genus Edriocrinus in the Bohemian Lower and Middle Devonian. *Journal of the National Museum, Natural History Series* 164(1-4):49-50, pl.I (3). Praha.
- Prokop, R.J., and V. Petr. 1995. Edriocrinus cf. ata Prokop, 1976 (Crinoidea) from the Koněprusy Limestone of the Bohemian Lower Devonian, attached inside the shell of a platyceratid shell. *Journal of the National Museum, Natural History Series* 164(1-4):105-106, pl.I (4). Praha.
- Prokop, R.J. 1996. Discovery of oligolamellar teeth of echinoids in the Silurian of the Barrandian area (Czech Republic). *Bulletin of the Czech Geological Survey* 71(4):375-376, 2 text-figs. Praha.
- Prokop, R.J., and V. Petr. 1996. Kuzbassocrinus cf. bystrowi Yeltyschewa, 1957 (Crinoidea) from the Lower Devonian Koněprusy Limestone of the Barrandian area (Czech Republic). *Journal of the Czech Geological Society* 41(4). (in press).
- Roccatagliata, A.J., M.S. Maier, A.M. Seldes, C. Pujol, and E.B. Damonte. 1996. Antiviral sulfated steroids from the ophiuroid Ophioplocus januarii. *J. Nat. Prod.*, 59:887-889.
- Roccatagliata, A.J., M.S. Maier, A.M. Seldes, S. Zea, and C. Duque. 1997. A new sulfated alkene from the ophiuroid Ophiocoma echinata. *J. Nat. Prod.*, 60:285-286.
- Roccatagliata, A.J., M.S. Maier, A.M. Seldes. (in press). Main sterols from the starfish Luidia ludwigi. *Anales Asoc. Quim. Argent.*
- Roccheri, M.C., L. Bosco, M.E. Ristuccia, D. Cascino, G. Giudice, A.O. Oliva, and A.M. Rinaldi. (in press). Sea urchin mitochondrial matrix contains a 56-KDa Chaperonine-like protein. *Biochem. Biophys. Res. Comm.*
- Roux, M., N. Ameziane, and J. David. (in press). Compromis adaptatifs et ontogenèse chez les crinoides pédonculés. *Géobios*, Lyon, 7 fig.
- Rowe, F.W.E. and J. Gates 1995. Echinodermata. In: Wells, A. (ed.) *Zoological Catalogue of Australia*. Vol. 33. Melbourne CSIRO Australia, xiii + 510 pp.
- Ruitton, S. and C.F. Boudouresque. 1994. Impact de Caulerpa taxifolia sur une population de l'oursin Paracentrotus lividus à Roquebrune-Cap Martin

- (Alpes-Maritimes, France). First International workshop on Caulerpa taxifolia, in Boudouresque, C.F., Meinesz, A. Gravez, V. édit., GIS Posidonie publ., Fr.:371-378.
- Schoppe, S. 1996. Ophiothrix synoecina new species (Echinodermata: Ophiuroidea) from the Caribbean coast of Colombia. Bull. Mar. Sci. 58(2):429-437.
- Schoppe, S., and B. Werding. 1996. The boreholes of the sea urchin genus Echinometra (Echinodermata: Echinometridae) as a microhabitat in Tropical South America. P.S.N.I.: Marine Ecology 17(1-3):181-186.
- Sconzo, G., G. Fasulo, D. Romancino, D. Cascino, and G. Giudice. 1996. Effect of retinoic acid and valproate on sea urchin development. Pharmazie 51(3):175-180.
- Sconzo, G., G. Amore, G. Capra, G. Giudice, D. Cascino, and G. Gherzi. (in press). Identification and characterization of a constitutive HSP75 in sea urchin embryos. Biochem. Biophys. Res. Comm.
- Sewell, M.A., A.S. Thandar, and F.-S., Chia. 1995. A redescription of Leptosynapta clarki Heding (Echinodermata: Holothuroidea) from the north east Pacific, with notes on changes in spicule form and size with age. Canad. J. Zool. 73:469-485.
- Sewell, M.A. 1996. Mortality of pentactulae during intraovarian brooding in the apodid sea cucumber Leptosynapta clarki. Biol. Bull. 190:188-194.
- Sewell, M.A., P.A. Tyler, C.M. Young, and C. Conand. 1997. Ovarian development in the Class Holothuroidea: a reassessment of the "tubule recruitment model". Biol. Bull. 192:17-26.
- Sgroi, A., P. Colombo, G. Duro, M. Friend, V. Izzo, and G. Giudice. 1996. c DNA sequence analysis and expression of the ribosomal protein S24 during oogenesis and embryonic development of the sea urchin Paracentrotus lividus. Biochemical and Biophysical Research Communications 221:361-367.
- Shin, S., and Rho, B.J. 1996. Illustrated Encyclopedia of Fauna & Flora of Korea, Vol. 36, Echinodermata. 780 pp. National Textbook Co. Ltd., South Korea.
- Sirenko, B.I., and D. Piepenburg. 1994. Current knowledge on biodiversity and benthic zonation patterns of the Eurasian Arctic shelf seas, with special reference to the Laptev Sea. Ber Polarforsch. 144:69-77.
- Solis-Marín, F.A., A. Laguarda-Figueras, and A. Leija-Tristán. 1997. Morphology, systematics, and distribution of Meoma ventricosa grandis and M. ventricosa ventricosa (Echinodermata: Echinoidea: Brissidae) along Mexican coasts. Proc. Biol. Soc. Wash. 110(2):301-309.
- Solis-Marín, F.A., H. Reyes-Bonilla, M.D. Herrero-Pérezul, O. Arizpe-Covarrubias, and A. Laguarda-Figueras. 1997. Sistemática y distribución de los Equinodermos de la Bahía de la Paz. Ciencias Marinas 23(2):249-263.
- Solovjev A.N., and O.H. Melikov. A new genus of the sea urchin Turanglaster from the upper Cretaceous deposits of Turkmenia and Azerbaijan. Paleontological Journal, SA of USSR, Moscow, 1963 No.1:105-110.
- Solovjev A.N., and O.H. Melikov. A new genus of the sea urchin Turanglaster from the upper Cretaceous deposits of Turkmenia and Azerbaijan. Internat. Geol. Review, 6(10):1821-1826. London 1965 (trans. P.M.Kier).
- Sonnenholzner, J., N. Camba, and J.M. Lawrence. 1997. Commercial fishing and organic composition of Isostichopus fuscus Ludwig, 1875 from the Galapagos Islands. SPC Beche-de-mer Information Bulletin 9:37.
- Stewart, B., and Mladenov, P.V. 1996. Population structure, growth and



- recruitment of the euryalinid snake star Astrobrachion constrictum (Echinodermata: Ophiuroidea) in Doubtful Sound, Fiordland, New Zealand. Marine Biology (in press)
- Stewart, B., and Mladenov, P.V. 1995. Reproductive periodicity in the euryalinid snake star Astrobrachion constrictum in a New Zealand fiord. Marine Biology 123:543-553.
- Stewart, B.G. (in press). Can a snake star earn its keep? Feeding and cleaning behaviour in Astrobrachion constrictum (Echinodermata: Ophiuroidea), a euryalid brittle-star that lives in association with the black coral Antipathes fiordensis. Journal of Experimental Marine Biology and Ecology.
- Stewart, B.G. 1996. Growth dynamics of the radial shields of the euryalid snake star Astrobrachion constrictum (Echinodermata: Ophiuroidea). Invertebrate Biology 115(4):321-330.
- Stewart, B.G. 1996. Sub-lethal predation and rate of regeneration in the euryalinid snake star Astrobrachion constrictum (Echinodermata: Ophiuroidea) in a New Zealand fiord. Journal of Experimental Marine Biology and Ecology 199:269-283.
- Stewart, B.G. 1995. Use of the fluorescent marker calcein for biomineralisation studies of the snake star Astrobrachion constrictum (Echinodermata: Ophiuroidea). In: Emson, R. and A.B. Smith (eds.) Echinoderm Research 1995: Proceedings of the 4th European Echinoderms Colloquium, London, 10-13 April. pp. 277-282.
- Štorc, R. 1997. Ophiuroid remains from the nearshore environments of the Bohemian Cretaceous Basin/ Cenomanian-Turonian boundary interval. A preliminary report. Bull. Czech. geol. Surv. Praha.
- Strathmann, R.R. 1996. Are planktonic larvae of marine invertebrates too scarce to compete within species? Oceanologica Acta 19:399-407.
- Tahera, Q., and Q.B. Kazmi. 1995. First record of Holothuria (Platyperona) difficilis Semper, 1868 (Echinodermata: Holothuroidea) from the northern Arabian Sea (Pakistan). Pak. J. Mar. Sci. 4(1):71-73.
- Tahera, Q. 1996. Some shallow water asteroids (Starfishes) of Karachi. Scientific Khyber 9(1):73-83.
- Tahera, Q. 1996. A checklist of Echinoderm fauna of Pakistan. Scientific Khyber 9(2):103-106.
- Tahera, Q. (in press). Note on Synaptula recta Semper, 1868 (Echinodermata, Holothuroidea, Synaptidae) new to Pakistan waters.
- Thandar, A.S. 1996. Chiridota durbanensis species new and a new record of Neothyonidium arthroprocessum from the east coast of South Africa (Echinodermata: Holothuroidea). S. Afr. J. Zool. 31(4):208-213.
- Thierry, J., B. Clavel, P. Hantzpergue, D. Neraudeau, L. Rigollet, and A. Vadet. 1997. Distribution chronologique et géographique des échinides jurassiques en France: essai d'utilisation chronostratigraphique. In: Biostratigraphie du Jurassique ouest européen et méditerranéen: zonations parallèles et distribution des invertébrés et microfossiles. Bull. Centr. Rech. Explo. Prod., ELF Aquitaine, Pau, Mém. n° 17 (in press).
- Tommasi, L.R., M.N. Albuquerque, and A.M. Gouveia Monteiro. 1993. Ophiuroidea das regiões Antártica e subantártica. 3. Os Amphiuridae (Ophiuroidea) coletados durante as viagens dos USNS "Eltanin" e "Hero" às regiões Antártica e subantártica. Relat. int. Inst. oceanogr. Univ. S Paulo 34:1-12.
- Tyler, P.A., J.D. Gage, G.J.L. Paterson, and A.L. Rice. 1993. Dietary constraints on reproductive periodicity in two sympatric deep-sea astropectinid seastars. Marine Biology 115:267-277.
- Tyler, P.A., G.L.J. Paterson, M. Sibuet, A. Guille, B.J. Muron, and M.

- Ségonzac. 1995. A new genus of ophiuroid (Echinodermata: Ophiuroidea) from hydrothermal moinds along the Mid-Atlantic Ridge. J. Mar. Biol. Ass. U.K., 75:977-986.
- Vadet, A., P. Nicolleau, and J.P. Dineau. 1996. Echinides du Callovien de la Sarth et de l'Ohm. I. Les Echinides reguliers, Mem. Soc. Acad. Bail. 17:1-184, pl. 1-29.
- Webster, G.D. 1997. Lower Carboniferous echinoderms from northern Utah and Western Wyoming. Paleontology Series, v 1. Utah Geological Survey Bulletin 128:1-65, 8 pls.
- Wood, S.J., and S.K. Donovan. 1996. Accumulations of a curator: Lucas Barrett's collection in the Geology Museum, UWI. Contributions to Geology, UWI, Mona 2:42-43.
- Young, C.M., P.A. Tyler, R.H. Emson, and J.D. Gage. 1993. Perception and selection of macrophyte detrital falls by the bathyal echinoid Stylocidaris lineata. Deep-Sea Research 1(40):1475-1486.
- Young, C.M., M.A. Sewell, P.A. Tyler, and A. Metaxas. (in press). Biogeographic and bathymetric ranges of Atlantic deep-sea echinoderms and ascidians: the role of larval dispersal. Biodiversity and Conservation 1997.
- Zavodnik, D. 1995. Additions to Adriatic Sea ophiuroid fauna and its diversity. Nat. Croat., 4:107-111.
- Zavodnik, D. 1995. Odd symmetrical and theratological Asteroidea of the Center for Marine Research collection (Rovinj, Croatia). Nat. Croat., 4:151-161.
- Zavodnik, D. 1996. Echinoderms of the Murter Sea with special reference to the Kornati Archipelago (central Adriatic Sea). In: M. Meštrov, P. Durbešić, M. Kerovec (eds.), Simpozij Nacionalni park Kornati, Hrvatsko ekološko društvo etc., Zagreb. Ekološke monografije, 7:269-275 (in Croatian).
- Zavodnik, D. 1996. The Kornati Archipelago (Adriatic Sea) marine fauna - knowledge and characteristics. In: M. Meštrov, P. Durbešić, M. Kerovec (eds.), Simpozij Nacionalni park Kornati, Hrvatsko ekološko društvo etc., Zagreb. Ekološke monografije, 7:277-288 (in Croatian).
- Zitt, J. 1996. Cyathidium Steenstrup (Crinoidea) in the Upper Cretaceous of Bohemia (Czech Republic).- J. Czech geol. Soc., 41, 233-239. Prague.
- Zitt, J., O. Nekvasilova, P. Bosak, D. Stenprokova-Jirova, and M. Stastny. 1997. Rocky coast facies of the Cenomanian-Turonian Boundary interval at Velim (Bohemian Cretaceous Basin, Czech Republic). First part. - Bull. Czech geol. Surv., 72, 1, 83-102. Praha.

\*\*\*\*\* BOOK ANNOUNCEMENTS \*\*\*\*\*

**Life and Death of Coral Reefs.** Edited by C. Birkeland, Marine Research Laboratory, University of Guam, Mangilao.

Over 70% of the coral reefs in the Caribbean and Asian waters have been degraded, and perhaps a third of the 400 species of corals in Japanese waters are in danger of local extinction unless effective coastal management practices are established. This book presents what is known about factors that "shift the balance" between accretion and erosion, recruitment and mortality, stony corals and filamentous algae, recovery and degradation - the life and death of coral reefs. Insight into the factors controlling the direction of these processes is essential for appropriate management decisions.

**Contents:** Introduction; Reefs and Earth history -- Pamela Hallock-Muller; Reefs as dynamic geological formations -- Dennis Hubbard; Bioerosion and coral-reef growth: a dynamic balance -- Peter W. Glynn; Interactions between corals and their symbiotic algae -- Gisele Muller-Parker and C.F. D'Elia; Diseases of coral-reef organisms -- Esther C. Peters; Organic production and decomposition -- Bruce G. Hatcher; Coral reproduction and recruitment -- Robert H. Richmond; Invertebrate predators and grazers -- Robert C. Carpenter; Effects of reef fishes on coral and algae -- Mark Hixon; Indirect interactions in the reef community -- Steven C. Pennings; Geographical variation in ecological processes on coral reefs -- Charles Birkeland; Interactions among coastal ecosystems -- John C. Ogden; Biodiversity -- Gustav Paulay; Disturbances to reefs in recent times -- Barbara E. Brown; Traditional coral-reef fisheries management -- Robert E. Johannes; Resource use, conflicts and management solutions -- Gregor Hodgson; Conclusions; References.

December 1996: 6 x 9: approx. 416 pp: 100 illus  
Hardback: 0-412-03541-3: \$59.95

E-MAIL FOR ORDERS: ORDER@CHAPHALL.COM

\*\*\*\*\*

Gee, H. 1996. **Before the Backbone; Views on the origin of the vertebrates.** 346 pp. Chapman & Hall. London. ISBN 0 412 48300 9.

(Echinoderms, Chordates and Hemichordates... Phylogeny of Deuterostomes... Gislen and carpoid echinoderms... Jefferies' Calcichordate Theory).

\*\*\*\*\*

Shin, S., and Rho, B.J. 1996. **Illustrated Encyclopedia of Fauna & Flora of Korea. Vol. 36, Echinodermata.** 780 pp. National Textbook Co. Ltd., South Korea.

\*\*\*\*\*

Echinoderms: San Francisco. Proceedings of the Ninth International Echinoderm Conference, San Francisco, California, August 6-10, 1996, Balkema, Rotterdam. (eds. R. Mooi, and M. Telford). (in press).

(communicated by Richard Mooi)  
e-mail: rmooi@cas.calacademy.org

## 1 General

- Aronson, R.B., D.B. Blake, T. Oji. Paleozoic-type echinoderm populations from the Late Eocene, Antarctica.
- Blake, Daniel B. Morphological characters of early asteroids and ophiuroids.
- Blake, Daniel B., Richard B. Aronson. Eocene echinoderms of Seymour Island, Antarctic Peninsula.
- Bonasoro, F., M.D. Candia Carnevali, C. Moss, M.C. Thorndyke. Epimorphic versus morphallactic mechanisms in arm regeneration of crinoids and asteroids: Pattern of cell proliferation/ differentiation and cell lineage.
- Brey, T. Predicting echinoderm p/b ratios by artificial neural networks.
- David, Bruno, Rich Mooi. Major events in the evolution of echinoderms viewed by the light of embryology.
- Ellers, O., M. Telford. A comparison of mechanical properties of vertebrate and echinoderm collagenous tissues.
- Gabaev, D.D. Some aspects of the ecology of young echinoderms settling on artificial substrata.
- Gavrilova, G.S. Regularities of distribution and present state of commercial echinoderm stocks in Peter the Great Bay (Japan Sea).
- Gavrilova, G.S. Some population characteristics of commercial species of echinoderms in Peter the Great Bay (Japan Sea).
- Hotchkiss, Frederick H.C. Discussion on pentamerism: The five-part pattern of Stromatocystites, Asterozoa and Echinozoa.
- Jaekle, William. Variation in alanine transport among sibling lecithotrophic larvae of holothuroid and asteroid echinoderms.
- Keesing, J., S. Uthicke, P. McShane, N. Andrew, W. Zacharin, H. Gorfine, M. Alma, D. Ramm, L. Joll. A review of the status of echinoderm fisheries in Australia and New Zealand.
- Kogure, Y., I. Hayashi. Distribution of echinoderms in the Sado Strait, the Japan Sea.
- Lepper, D.M.E. Ultrastructure and morphology of the epidermis and tube feet of two echinoderms.
- Littlewood, D.T.J., A.B. Smith, K.A. Clough, R.H. Emson. Five classes of echinoderm and one school of thought.
- McClintock, J.B., G.A. Hines, C.B. Byrum, K.M. Wasson, S.A. Watts. Sex steroid biosynthesis in two Antarctic echinoderms: Odontaster validus and Sterechinus neumayeri.
- McKenzie, J. Douglas, William J. Burnett, Maeve S. Kelly. Systematic distribution of subcuticular bacteria in echinoderms.
- Mooi, Rich, F.W.E. Rowe, Bruno David. Application of a theory of axial and extraxial skeletal homologies to concentricycloid morphology.
- Motokawa, Tatsuo. "Exoskeleton-like endoskeleton" + "mechanically active connective tissue" = Success of echinoderms: an anthem of Echinodermata.



- Neraudeau, Didier, Jacques Thierry, Gerard Breton, Pierre Moreau.  
Comparative variation in asteroid and echinoid diversity during the Late Cenomanian transgression in Charentes (France).
- Powell, II, C.L., R. Mooi. Echinodermata of the Miocene and Pliocene Imperial Formation of southern California.
- Rozhnov, S.V. The left-right asymmetry in echinoderms.
- Ryabushko, V.I. Levels of energy metabolism of echinoderms in the evolution of the animal kingdom.
- Sewell, M.A., C.M. Young. Echinoderm egg size-distributions are not always bimodal.
- Sumrall, Colin D., James Sprinkle. Phylogenetic analysis of living Echinodermata based on primitive fossil taxa.
- Turner, R.L. The metameric echinoderm.
- Wray, Gregory A. Origin and diversification of echinoderm body architecture: Insights from the expression of body-patterning genes.

## 2 Extinct Classes

- Gil Cid, D., M. Escribano Rodenas, P. Dominguez Alonso, E. Silvan Pobes. The "cystoid beds" from Navas de Estena (Middle Ordovician, Montes de Toledo, Spain).
- Gil Cid, M.D., P. Dominguez Alonso. "Carpoidea" and Pelmatozoa from the Middle Cambrian of Zafra (SW Spain).
- Gil Cid, M.D., P. Dominguez Alonso, M. Escribano Rodenas. Biomechanical behaviour and anatomical features of *Cincta* (Carpoidea).
- Gil Cid, M.D., P. Dominguez Alonso, M. Escribano Rodenas. The echinoderm and chordate fauna of the "Pizarras Cantera" Formation (Upper Ordovician, southern Spain).
- Lefebvre, B., P. Racheboeuf, B. David. Homologies in stylophoran echinoderms.
- Parsley, R.L. Taxonomic revision of the Stylophora.

## 3 Crinoids

- Ameziane, N., T. Heinzeller, J.-P. Bourseau, U. Welsch. The "young Holopus" of Carpenter (1884): Juvenile stage or a species of its own?
- Ausich, William I. Origin of the Crinoidea.
- Baumiller, Tomasz K., E.F. Rome. The Interference Avoidance Hypothesis and the spatial distribution of Endoxocrinus parrae (Crinoidea, Echinodermata).
- Birenheide, Rudiger, Tatsuo Motokawa. Crinoid ligaments: Catch and contractility.
- Candia Carnevali, M.D., F. Bonasoro, U. Welsch, M.C. Thorndyke. Arm regeneration and growth factors in crinoids.
- Eeckhaut, I., D. Deheyn, M. Jangoux. Study on the symbiotic fauna of crinoids collected in Hansa Bay (Bismarck Sea, Papua-New Guinea).
- Eeckhaut, I., D. Van den Spiegel, A. Michel, M. Jangoux. Chemical detection and host recognition by the crab Harrovia longipes Lanchester, 1900, an ectosymbiont of crinoids.
- Esquivel-Macias, C., B.E. Buitron-Sanchez, A. Flores de Dios-Gonzalez, F.A. Solis-Marin. Unusual Pennsylvanian crinoids from San Salvador Patlanoaya, Puebla, Mexico.



- Featherstone, C.M., C.G. Messing, J.B. McClintock. Seasonal variation in the biochemical and energetic composition of two bathyal stalked crinoids: Neocrinus decorus and Endoxocrinus parrae.
- Featherstone, Charles M., Charles G. Messing, James B. McClintock. Dietary composition of two bathyal stalked crinoids: Neocrinus decorus and Endoxocrinus parrae (Echinodermata: Crinoidea: Isocrinidae).
- Hagdorn, H., T.K. Baumiller. Distribution, morphology and taphonomy of Holocrinus, the earliest post-Paleozoic crinoid.
- Heinzeller, T. The nervous system of crinoids: Survey and taxonomic implications.
- Heinzeller, T., N. Ameziane-Cominardi. Development of cyrtocrinids (Echinodermata: Crinoidea).
- Kendrick, D.C. Phylogenetic analysis and convergence in flexible crinoids.
- Mannifield, Kay, George D. Sevastopulo. Long stemmed crinoids from the Carboniferous of Ireland.
- Messing, C.G. An initial re-assessment of the distribution and richness of the East Indian shallow-water crinoid fauna.
- Nichols, D., P.V. Mladenov. Seasonality of cell-inclusions during gametogenesis in the comatulid Oxycomanthus plectrophorum from New Zealand.
- Oji, Tatsuo. A comparison of predation pressure between shallow- and deep-water populations of Endoxocrinus parrae, a west Atlantic stalked crinoid.
- Oji, Tatsuo, Minoru Tamura. The oldest record of articulate crinoids: Smithian Holocrinus? from northeast Japan.
- Silvan Pobes, E.M., M.D. Gil Cid, P. Dominguez Alonso, M. Escribano Rodenas. More about Spanish Ordovician crinoids.
- VandenSpiegel, D., I. Eeckhaut, M. Jangoux. On the association between the shrimp Synalpheus stimpsoni (De Man, 1888) and the crinoid Comaster multifidus (Hartlaub, 1890).

#### 4 Asteroids

- Balser, Elizabeth, Erin Fisher. The effect of salinity on heartbeat frequency in larvae of the asteroid Pisaster ochraceus.
- Byrne, M. Evolution of larval form in Patiriella: The intragonadal larvae of P. vivipara and P. parvivipara have a vestigial brachiolar complex.
- Byrne, M., A. Cerra, T. Nishigaki, M. Hoshi. Male infertility in Asterias amurensis: A new phenomenon resulting from introduction of the parasitic ciliate Orchitophrya stellarum to Japan.
- Byrne, M., M.G. Morrice, B. Wolf. Introduction of the northern Pacific asteroid Asterias amurensis to Tasmania: Reproduction and current distribution.
- Cavey, Michael J. Neuromyoepithelial relationships in the starfish ambulacrum and excitation-contraction coupling among the podial retractor cells.
- Cavey, Michael J. A simple device for rapid decalcification of the starfish ambulacrum with ascorbic acid (vitamin C).
- Cerra, Anna, Maria Byrne. Cell surface features and the extracellular matrix around the larvae of Patiriella species with planktonic, benthic and intragonadal development: Implications for larval nutrition.
- Crump, R.G., R.H. Emson. Observations on the effects of oil pollution on tidepool seastars.
- Dale, Jonathan H. Coordination of chemosensory orientation in the starfish

Asterias forbesi.

- Demian, D.J., C.W. Walker. Interrelated mitogenic signalling pathways during spermatogonial gl/s-phase traverse in the testis of the North Atlantic sea star Asterias vulgaris.
- Foltz, D. W. Distribution of intertidal Leptasterias spp. along the Pacific North American coast: A synthesis of allozymic and mtDNA data.
- Guerrazzi, M.C., E.H. Morgado, L.F.L. Duarte. Population structure of the starfish Echinaster brasiliensis Muller & Troschel along the southeastern Brazilian coast.
- Guerrazzi, M.C., E.H. Morgado, L.F.L. Duarte. Foraging activity in population of the starfish Echinaster brasiliensis Muller & Troschel.
- Harris, L.G., M. Tyrell, C.M. Chester. Changing patterns for two seastars in the Gulf of Maine, 1976-1996.
- Hart, M.W., M. Byrne, M.J. Smith. The molecular phylogeny of Patiriella species and analysis of life history evolution in asterinid starfish.
- Hopkins, T.S. A sea star conundrum: The genus Henricia (Echinasteridae) from the U.S. Pacific coast. Part I. the San Diego connection.
- Janies, D.A. Reconstructing the evolution of asteroid morphogenesis and dispersal.
- Knott, K.E., T.S. Hopkins. Morphological and biochemical variation in two color morphs of Luidia clathrata.
- Koh, B.C.A., D.J.W. Lane. Locomotory coordination and the podia-ampulla system in Stellaster equestris (Asteroidea; Goniasteridae).
- Komatsu, Mieko, Kazuhiro Terashima, J. Prestege, Chitaru Oguro. Larvae are present in the ovoviviparous sea star, Patiriella vivipara.
- Lepper, D.M.E., P.A. Moore. The role of chemical signals in the foraging behavior of the sea star Asterias forbesi.
- Lockhart, S.J., D.A. Ritz. Feeding rates of the introduced sea star, Asterias amurensis (Lutken), in Tasmania.
- Mah, Christopher L. Phylogeny and taxonomy of the Brisingida (Asteroidea: Forcipulatacea) with natural history notes from Monterey Bay.
- Marion, K.R., S.A. Watts, J.B. McClintock, G. Schinner, T.S. Hopkins. Seasonal gonad maturation in Astropecten articulatus from the northern Gulf of Mexico.
- Mito, T. A PCR survey of hom/hox-class homeobox genes in the sea star, Asterina minor.
- Moosleitner, H. Is "Fromia nodosa" (Asteroidea: Ophidiasteridae) from the Maldives another species?
- Potton, D.J., M.C. Thorndyke. Neurohormonal peptide regulation of stomach motility in starfish: In vivo and in vitro studies.
- Rowland, C.J. Marginaster littoralis Dartnall, 1970 (Echinodermata, Asteroidea): A case of genetic swamping by an introduced pest?
- Stubbs, A.M., K.R. Matthaei. The diurnal behavioral cycle of Pisaster giganteus; is it related to light?
- Tamplin, J.W., W.B. Stickle. Effects of temperature, feeding, and starvation on Leptasterias epichlora.
- Temara, A., M. Warnau, M. Jangoux, P. Dubois. Effect of exposure to cadmium on the concentrations of essential metals in Asterias rubens (Asteroidea).
- Temara, A., W.J. Langston, M. Warnau, M. Jangoux, P. Dubois. Value of Asterias rubens (Asteroidea) in bioindicating heavy metal contamination in naturally-occurring conditions.
- Tosuji, H. Determination of oral-aboral axis in larvae of the starfish, Asterina pectinifera.
- VandenSpiegel, D., H.H. Janssen, M. Jangoux. Ultrastructure of ciliated urns in Archaster typicus Muller and Troschel, 1840 (Asteroidea,

Echinodermata).

Ventura, C.R.R., J.S. Santos, A.P.C. Falcao, C.S. Fiori. Reproduction and food intake in Astropecten cingulatus (Asteroidea: Paxilloidea) in the upwelling environment of Cabo Frio (Brazil).

Yakovlev, Y.M. The temperature tolerance of adult sea-stars (Asterias amurensis) in the laboratory.

## 5 Ophiuroids

Beardsley, A.M., J.M. Colacino. Oxygen transport by the water vascular system of the ophiuroid, Hemipholis elongata.

Clements, L.A.J., A. Lauricella, A. Strasbaugh, E.K. Serff. The effects of cadmium and zinc on regeneration and behavior in Ophiophragmus filograneus.

Dahm, C. Population ecology of brittle stars inhabiting the Weddell Sea shelf (Antarctica).

Davoult, D., F. Dewailly, A. Migne. Carbon and nitrogen budget of a dense population of the suspension-feeding ophiuroid Ophiothrix fragilis (Albildgaard) in a macrotidal coastal ecosystem.

De Bremaeker, N., J. Mallefet, F. Baguet, M.C. Thorndyke, D.J. Potton, D. Deheyn. Presence of the SALMFamide neuropeptides S1 and S2 in the brittlestar, Amphipholis squamata: Immunohistochemical and radioimmunoassay detection.

Dean, Juliette. Stenaster obtusus: Asteroid or ophiuroid?

Deheyn, D., I. Eeckhaut, J. Moens. A new species of polyclad (Platyhelminthes), endosymbiont of the ophiuroid Ophiothrix purpurea.

Deheyn, Dimitri, Genevieve De Becker, Leo Oberdan, Jerome Mallefet, Michel Jangoux. Production of monoclonal antibodies raised against Amphipholis squamata photocytes.

Deheyn, Dimitri, Jerome Mallefet, Michel Jangoux. Bioluminescence in Amphipholis squamata: An anti-predator aposematic deterrent function?

Fujita, T. Brooding of the deep-sea brittlestar Amphiophiura penichra (H.L. Clark).

Hendler, Gordon. Implications of the remarkable ontogenetic changes in some deep-sea brittle stars.

Irimura, Seiichi. Forms of ophiuroid disk granules and their taxonomic significance.

Ishida, Yoshiaki, Tsumoru Tanabe, Takashi Ito, Kiichiro Hachiya.

Paleo-environment of fossil ophiuroids from the Plio-Pleistocene Hijikata Formation of the Kakegawa Group, Shizuoka Prefecture, central Japan.

Jagt, John W.M., Manfred Kutscher. Late Cretaceous ophiuroids from Germany and the Netherlands: An update.

Lamont, Peter A., John D. Gage. Dense brittle star population on the Scottish continental slope.

Liesman, J.M. Variable recruitment of the estuarine brittlestar Ophiophragmus filograneus (Echinodermata: Ophiuroidea) in the Banana River, Florida.

Lowe, C.J., G.A. Wray. Engrailed expression during juvenile development in the ophiuroid Amphipholis squamata.

Makra, A., B.F. Keegan. Microdistribution within a population of Acrocnida brachiata (Montagu), (Echinodermata: Ophiuroidea) on the west coast of Ireland.

Mallefet, J., B. Chabot, N. De Bremaeker, F. Baguet. Evidence for a calcium requirement in Amphipholis squamata (Ophiuroidea) luminescence.



- Marsh, L.M. Hitch-hiking ophiuroids.
- McCormack, G.P., B.F. Keegan, R. Powell. The use of RAPD (random amplified polymorphic DNA) analysis in genetic studies of brittle stars (Echinodermata: Ophiuroidea).
- Medeiros-Bergen, Dorothy E., Nicole T. Perna, Janet A. Conroy, Thomas D. Kocher. Identification of ophiuroid post-larvae using mitochondrial DNA.
- Newton, L.C., J.D. McKenzie. Development and evaluation of echinoderm pollution assays.
- Nilsson, H.C. Effects of hypoxia and organic enrichment on growth of the brittle stars Amphiura filiformis and Amphiura chiajei.
- Pearse, Vicki B., John S. Pearse, Gordon Hendler, Maria Byrne. Discovery of an accessible population of Ophiocanops, off NE Sulawesi, Indonesia.
- Piepenburg, Dieter. Brittle star assemblages on Arctic shelves: Distribution, composition and significance in benthic systems.
- Selvakumaraswamy, P., M. Byrne. A vitellaria with a reduced ophiopluteal skeleton.
- Smirnov, I. The relationship between type of development and type of distribution of polar brittle-stars.
- Smirnov, I., S.D. Stepanjants, V.M. Koltun, A. Svoboda. Polar ophiuroids and their symbiotic relations.
- Smirnov, Igor S., Andrey L. Lobanov, Mikhail B. Dianov. Creation of computer picture identification key for the Arctic ophiuroids.
- Stancyk, S.E., T. Fujita, C. Muir. Predation behavior on swimming organisms by Ophiura sarsii.
- Stewart, B.G. Induced spawning and ovulation in the phrynophiurid, Astrobrachion constrictum.
- Stewart, B.G., P.V. Mladenov. Population structure, growth and recruitment of the euryalinid snake star Astrobrachion constrictum (Echinodermata: Ophiuroidea) in Doubtful Sound, Fiordland, NZ.

## 6 Holothuroids

- Bradbury, A., W.A. Palsson, R.E. Pacunski. Stock assessment of the sea cucumber Parastichopus californicus in Washington.
- Byrne, Maria. Ultrastructure of autotomy and catch connective tissue regions of the integument of Eupentacta quinquesemita (Holothuroidea).
- Castro, L.R.S. Review of recent developments in the Baja California, Mexico. Isostichopus fuscus, Holothuria impatiens, and Parastichopus parvimensis fisheries.
- Conand, C. Overexploitation in the present world sea cucumber fisheries and perspectives in mariculture.
- Garcia-Arraras, J.E., I. Torres, L. Estrada. Cellular events during intestinal regeneration in Holothuria glaberrima: Analysis using monoclonal antibodies.
- Gebbruk, A.V. Spicule changes during somatic growth in holothurians.
- Gudimova, E.N., V.S. Levin. Taxonomic relationship between Cucumaria frondosa and C. japonica (Dendrochirotida, Cucumariidae).
- Hadel, V.F., C.G. Tiago, A.S.F. Ditadi, G.Y. Kawauchi. Reproduction and development of the apodous holothurian Chiridota rotifera (Pourtales, 1851), in the laboratory.
- Kashenko, S.D. Effect of acclimation to desalination of the sea cucumber Stichopus japonicus (Echinodermata: Holothuroidea) during the prespawning period on adaptability of different development stages.
- Kashenko, S.D. Effect of temperature and salinity on the development of



- holothurians.
- Klinger, T.S., C.R. Johnson. Spatial and temporal distribution of feeding of Aspidochirotida (Holothuroidea) on Heron Island, Great Barrier Reef.
- Lambert, Philip. A taxonomic review of five northeastern Pacific sea cucumbers (Holothuroidea).
- Martinez, P.C., M.V. Toral, R.H. Bustamante. Population and reproductive biology of the sea cucumber Isostichopus fuscus in the Galapagos Islands.
- Martinez, P.C., R.H. Richmond. Effect of diet on growth and larval development of the sea cucumber Holothuria nobilis in Guam.
- Mladenov, Philip V., Alan Campbell. Resource evaluation of the sea cucumber Stichopus mollis, in the environmentally sensitive fiordland region of New Zealand.
- O'Loughlin, P. Mark. A review of the holothurian family Gephyrothuriidae.
- O'Loughlin, P. Mark. Elasipod holothurians from the continental slope of Australia.
- Oganesyan, S.A., G.V. Grigorjev. Reproductive cycle of the holothuroid Cucumaria frondosa in the Barents Sea.
- Perez-Plascencia, G. Growth and reproduction of the commercial sea cucumber Parastichopus parvimensis in Baja California, Mexico.
- Pomory, C.M., T.W. Foret, S.K. Hill, J.M. Lawrence. Characteristics of a population of Holothuria floridana from Florida.
- Rodriguez-Milliet, E., S.M. Pauls. Sea cucumber fisheries in Venezuela.
- Smirnov, Alexei V. On the classification of the apodid holothurians.
- Smith, A., J. Matthiopoulos, I.G. Priede. The simulated deep-sea holothurian.
- Solis-Marin, F.A., M.D. Herrero-Perezrul, A. Laguarda-Figueras. New records of the lagoon reef holothurians of Puerto Morelos, Quintana Roo, Mexico.
- Szulgit, G.K., R.E. Shadwick. Determining the nature of stiffness alteration in holothurian dermis using dynamic mechanical analysis
- Thandar, A.S. Composition, distribution and probable origin of the Southern African holothuroid echinoderms.
- Thandar, A.S. A new dendrochirote holothuroid from deep waters of the west coast of South Africa.
- Thurmond, F.A., J.A. Trotter, T.J. Koob, J.M. Bowness. Microfibrils from sea cucumber dermis belong to the fibrillin family, and their long-range elasticity is a crucial component of mutable collagenous tissues.
- Trotter, J.A., G. Lyons-Levy, D. Luna, K. Chino, M.M. Koob-Emunds, T.J. Koob. Non-collagenous proteins modulate the stiffness of sea cucumber dermis in vivo and interactions between isolated collagen fibrils in vitro.
- Uthicke, S. Respiration of Holothuria (Halodeima) atra, Holothuria (Halodeima) edulis and Stichopus chloronotus: Intact individuals and products of asexual reproduction.
- Woodby, D.A., R.C. Larson. Response of sea cucumber populations to a conservative harvest strategy in southeast Alaska, USA.
- Xing, Jun, Fu-Shiang Chia. Phagocytosis of sea cucumber amoebocytes: A flow cytometric study.

## 7 Echinoids

- Ali, Mohammed Said M. Some Miocene Scutellina (Echinoidea, Echinodermata) from the northern Western Desert, Egypt: a preliminary study.
- Arakaki, Y., T. Uehara, I. Fagoonee. Comparison between Echinometra species

- from Mauritius and Okinawa.
- Balch, T., R.E. Scheibling. Settlement and recruitment of echinoderms in kelp beds and sea urchin-dominated barren grounds in Nova Scotia.
- Balch, T., R.E. Scheibling, L.G. Harris, C.M. Chester, S.M.C. Robinson. Variation in settlement of (Strongylocentrotus droebachiensis) in the northwest Atlantic: Effects of spatial scale and sampling method.
- Basch, L.V., M.J. Tegner. Reproductive ecology of sea urchins, Strongylocentrotus purpuratus, at contrasting intertidal and subtidal environments.
- Bazhin, A.G. The sea urchin genus Strongylocentrotus in the seas of Russia: taxonomy and ranges.
- Beer, A.-J., M. Thorndyke, R. Burke, Y. Nakajima. Studies on the developing nervous system of the sea urchin Psammechinus miliaris.
- Bentley, Andrew C. Reproductive cycle and gonadal histology of Echinodiscus bisperforatus along the southern coast of South Africa.
- Beyer, D., J.S. Pearse, M.E. Steele. Both photoperiod and diet influence resource partitioning between somatic and gonad growth in sea urchins, Strongylocentrotus franciscanus.
- Biermann, C.H. Population genetic structure and the evolution of reproductive isolation in strongylocentrotid sea urchins.
- Borzone, C.A., Y.A.G. Tavares. Morphometric variations of Mellita quinquiesperforata (Leske, 1778) in different sandy beach environments.
- Borzone, C.A., Y.A.G. Tavares, F.C.R. Barros Jr. Beach morphodynamics and distribution of Mellita quinquiesperforata (Leske, 1778) on sandy beaches of southern Brazil.
- Bottger, S.A., T.S. Klinger. Responses of Arbacia punctulata (Echinodermata: Echinoidea) to stress induced by elevated phosphate levels.
- Burch, B.L., T.A. Burch. Observations on Chaetodiadema pallidum in the Hawaiian Archipelago.
- Byrne, M., R.K. Siegel. Comparison of vitellogenesis in the oligolecithal eggs of Heliocidaris tuberculata and the macrolecithal eggs of H. erythrogramma (Echinoidea).
- Campbell, A.C., B.L. Savill. Regeneration of pedicellariae in Psammechinus miliaris (Gmelin).
- Chen, C.-P., C.-M. Chao. Reduction of growth rate as the major process in the miniaturization of the sand dollar, Sinaechinocyamus mai.
- Conand, C., M. Heeb, M. Peyrot-Clausade, M.F. Fontaine. Bioerosion by the sea urchin Echinometra on La Reunion reefs (Indian Ocean) and comparison with Tiahura reefs (French Polynesia).
- David, B., F. Magniez, P. de Wever. In situ observation of the deep sea pourtalesiid Cystocrepis setigera in the Peru Trench.
- Ebert, Thomas A. An analysis of the importance of Allee effects in management of the red sea urchin Strongylocentrotus franciscanus.
- Eble, Gunther J. Diversification of disasteroids, holasteroids and spatangoids in the Mesozoic.
- Emlet, R.B., O. Hoegh-Guldberg. Energy use during development of a lecithotrophic and a planktotrophic echinoid.
- Emson, R.H., K.T. Tanti. Pedicellarial regeneration pattern in Psammechinus miliaris; random or predictable?
- Emson, R.H., P.G. Moore. Diet and gonad size in three populations of Echinus esculentus.
- Evdomikov, V.V., G.I. Victorovskaya, I.V. Biryukova. A possibility of artificial recovery of sea urchin concentrations in natural communities.
- Feral, Jean-Pierre, Elie Poulin, Kadija Oubelkheir. Geographic and genetic differentiation of Echinocardium cordatum (Pennant). The current state

- of a complex question: The status of Echinocardium fenauxi (Pequignat). Fernandez, Catherine, Charles-Francois Boudouresque. Evaluating artificial diets for small Paracentrotus lividus (Echinodermata: Echinoidea).
- Fujisawa, H. Correlation between thermosensitivity of sea urchin embryos and membrane fluidity of the embryonic cells.
- Fujita, D. Strongylocentrotid sea urchin-dominated barren grounds on the Sea-of-Japan coast of northern Japan.
- Gallemi, J., M.P. Villalba. A marsupiate cidaroid from the Late Cretaceous of southeastern Pyrenees.
- George, S.B., Craig Young. Can bathyal echinoids maintain the production of high quality eggs regardless of diet?
- Goebel, N., M.F. Barker. Artificial diets supplemented with carotenoid pigments as feeds for sea urchins.
- Grosjean, P., C. Spirlet, M. Jangoux. Closed-circuit cultivation of the edible sea-urchin Paracentrotus lividus: Optimization of somatic growth through the control of abiotic environment.
- Hagen, Nils T. Effects of food availability and body size on out-of-season gonad yield in the green sea urchin.
- Haude, R. Evolutionary reconstruction of primitive (spinate) echinoid pedicellariae.
- Hood, S., R. Mooi. Taxonomy and phylogenetics of extant Brisaster (Echinoidea: Spatangoida).
- Indeherberge, Ludo J., Edwin H.O. Defour, Raymond W.J.M. van der Ham, John W.M. Jagt. Artificial casts and species identification of the Cretaceous echinoid Diplodetus.
- Ishikawa, M., N. Uto, Y. Muto, K. Kanatani. Appearance of the subcortical fiber-structure at the onset of development of the sea urchin egg.
- Ito, Y., I. Hayashi. Basic behavior of three species of sea urchins under experimental conditions.
- Jeffery, C.H., A.B. Smith. Estimating extinction levels for echinoids across the Cretaceous-Tertiary boundary.
- Jeffery, Charlotte H. Carrying on regardless: Changes in the echinoid genus Cyclaster at the Cretaceous-Tertiary boundary.
- Jeffery, Charlotte H. Echinoids from the Maastrichtian and Danian of the Mangyshlak Peninsula, Kazakhstan.
- Johnson, A.S., O. Ellers. Is skeletal growth in sea urchins analogous to molting?
- Kaasa, Oivind, Karl Gunnarsson, Einar Hjorleifsson. Population dynamics of the green sea urchin Strongylocentrotus droebachiensis in Eyjafjordur, north Iceland: A comparison of kelp front and barren ground urchins.
- Kelly, M.S., C.C. Brodie, J.D. McKenzie. Sea urchins in polyculture: The way to enhanced gonad growth?
- Klinger, T.S., J.M. Lawrence, A.L. Lawrence. Digestion, absorption, and assimilation of prepared feeds by echinoids.
- Lamare, Miles. Restricted larval transport in a population of the sea urchin, Evechinus chloroticus (Val.) in a New Zealand fiord.
- Lawrence, John M., Alexander Bazhin, Bradley R. Robbins. Phenotypic plasticity in Strongylocentrotus droebachiensis at Petropavlovsk-Kamchatsky.
- Leddy, H.A. Walking versus breathing: Functional morphology of oral and aboral podia from the green sea urchin, Strongylocentrotus droebachiensis.
- Lessios, H.A., B.D. Kessing, G.M. Wellington, Anna Graybeal. Indo-Pacific echinoids in the tropical eastern Pacific.
- Markov, A.V., A.N. Solovjev. Echinoids at the Cretaceous/Paleogene boundary.



- Marsh, A.G., D.T. Manahan. Embryonic development in the Antarctic sea urchin Sterechinus neumayeri: Physiological differences between pelagic and demersal development.
- McNamara, K.J. First records of holasteroid, neolampadoid and aeropsid echinoids from Australian waters.
- Meidel, S.K., R.E. Scheibling. Size and age structure of the sea urchin Strongylocentrotus droebachiensis in different habitats.
- Meidel, S., R.E. Scheibling. The effect of diet on first reproduction and larval development in the green sea urchin Strongylocentrotus droebachiensis.
- Meidel, S., R.E. Scheibling. Resource allocation in juvenile and adult sea urchins (Strongylocentrotus droebachiensis) in kelp beds and barren grounds off Nova Scotia.
- Metaxas, Anna, Craig M. Young. The effect of a dense food patch on larval response to haloclines.
- Miller, B.M., R.B. Emlet. Temperature-dependent developmental rates and age determination of newly settled red and purple sea urchins.
- Montero-Torreiro, M.F., P. Garcia-Martinez, J.L. Catoira, G. Mosquera. Seasonal variation in biochemical composition in gonads of the sea urchin, Paracentrotus lividus Lmk.
- Morris, Valerie B., Jennifer Brammall, Maria Byrne, Marianne Frommer. Homeobox gene sequences in the sea urchin Holopneustes purpurescens.
- Moylan, E.M., E.M. Sides, M. Byrne. The fishery and cultivation of Paracentrotus lividus in Ireland.
- Nebelsick, J.H. Palaeoecology and taphonomy of the Miocene sand dollar Parascutella.
- Neill, J.B., D. King, S. Kuhn. Systematic relationships in the genus Echinometra as inferred from morphometric analyses.
- Oganesyan, S.A. Reproductive cycle of the echinoid Strongylocentrotus droebachiensis in the Barents Sea.
- Ojeda, F.P., C.W. Caceres, S.J. Gonzalez. Experimental feeding ecology of the edible sea urchin, Loxechinus albus, off the coast of northern Chile.
- Oyen, C.W. Allometric heterochrony in Cenozoic mellitid echinoids (S.E. U.S.A.).
- Pearse, John S. Distribution of Diadema savignyi and Diadema setosum in the tropical Pacific.
- Perez-Acevedo, N.L., H. Marrero, J. del Castillo, D.S. Smith. Transient wrinkles in a variable length echinoid tendon.
- Popodi, E., J.A. Bolker, M.J. Ferkowicz, M.E. Andrews, R.A. Raff. Development of the sea urchin central nervous system in Heliocidaris erythrogramma.
- Popodi, E., M.J. Ferkowicz, M.E. Andrews, R.A. Raff. Expression of engrailed and wnt5 in the developing sea urchin nervous system.
- Poulin, Elie, Jean-Pierre Feral. Genetic structure of the brooding sea urchin Abatus cordatus, an endemic of the Subantarctic Kerguelen Island.
- Propp, M.V., A.A. Karpenko, Vladimir K. Iljaschenko. Recording movements of sand dollars and common heart urchins in the sediment by measuring high frequency conductivity and magnetic fields.
- Robinson, S.M.C., L. Colborne. Roe enhancement trials of the green sea urchin using an artificial food source.
- Rodriguez, S.R., J.M. Farina, F.P. Ojeda. Behavior and spatial distribution patterns of the sea urchin Tetrapygus niger (Echinodermata: Echinoidea) in presence of predators, food, and topography.
- Rogers-Bennett, L., H.C. Fastenau, C.M. Dewees. Spatial patterns in the recovery of red sea urchin beds following experimental harvest: Implications for harvest refugia.



- Rose, Edward P.F., Alice C. Watson. Burrowing adaptations of schizasterid echinoids from the Globigerina Limestone (Miocene) of Malta and their evolutionary significance.
- Russell, M.P., T.A. Ebert, P.S. Petraitis. Field estimates of growth and mortality for the green sea urchin, Strongylocentrotus droebachiensis.
- Scheibling, R.E., A.W. Hennigar. Large-scale oceanographic and meteorologic features and recurrent mass mortalities of sea urchins off Nova Scotia.
- Shkuratov, D.Y., S.D. Kashenko, A.L. Drozdov. Influence of low intensity laser radiation and super-high-frequency electro-magnetic fields on sea urchin gametes and embryos.
- Solandt, J.-L., A.C. Campbell. Habitat selection in Jamaican echinoids.
- Sonnenholzer, J., J.M. Lawrence. Disease and predation in Encope micropora (Echinoidea: Clypeasteroidea) at Playas, Ecuador.
- Spirlet, C., P. Grosjean, M. Jangoux. Closed-circuit cultivation of the edible sea-urchin Paracentrotus lividus: Optimization and control of gonadal growth.
- Tavares, Y.A.G., C.A. Borzone. General features of population dynamics of the sand dollar Mellita quinquiesperforata (Leske, 1778) in southern Brazilian sandy beaches.
- Telford, Malcolm, Olaf Ellers. The moving teeth of echinoids.
- Tominaga, Hideyuki. Development of the Japanese keyhole sea urchins, Astriclypeus manni Verrill and Echinodiscus tenuissimus (L. Agassiz & Desor).
- Unuma, T., T. Suzuki, T. Kurokawa, T. Yamamoto, T. Akiyama. A protein identical to the yolk protein precursor is stored in the testis of male sea urchins.
- van der Ham, Raymond W.J.M., John W.M. Jagt. Late Cretaceous hemiasterid echinoids from the Maastrichtian type area.
- Velez-Andrade, L.V., O. Sosa-Nishizaki. Some biological aspects of the purple sea urchin Strongylocentrotus purpuratus from Todos Santos Island, B.C., Mexico.
- Victorovskaya, G.I. Distinguishing peculiarities of sea urchin Strongylocentrotus intermedius reproduction in northern Primorye.
- Walker, C.W., M.P. Lesser, D.J. Demian. Prepared food coupled with manipulation of photoperiod yield an out-of-season crop for the northeastern sea urchin.
- Warnau, M., A. De Biase, M. Iaccarino, A. Temara, M. Jangoux, P. Dubois, G. Pagano. Developmental toxicity of heavy metals in the echinoid Paracentrotus lividus: Effects of multi-element exposures.
- Warnau, Michel, Mario Iaccarino, Antonella De Biase, Ali Temara, Giovanni Pagano. Influence of chemical speciation on developmental toxicity of lead in the echinoid Paracentrotus lividus (Echinodermata).
- Wasson, K.M., S.A. Watts. New method for evaluating the role of steroids in echinoids.
- Wheatley, K., R.G. Brown, R.E. Scheibling, J.F. Jellet. Coelomocyte oxidative activity of the green sea urchin (Strongylocentrotus droebachiensis) following challenge by bacterial and amoebic pathogens.
- Williams, C.T., L.G. Harris. Growth of juvenile green sea urchins on natural and artificial diets.
- Wu, J.-Y., C.-P. Chen, C.-F. Hui, S.-P. L. Hwang, D.J. Miller. Preliminary studies on hox type homeoboxes in the echinoids Stomopneustes variolaris and Tripneustes gratilla.
- Young, C.M., R.H. Emson, P.A. Tyler, M.G. Devin. Social behavior, reproduction and larval development in the deep-sea spatangoid urchin Archaeopneustes hystrix.

\*\*\*\*\* PAPERS PRESENTED AT CONFERENCES \*\*\*\*\*  
(by region)

AFRICA

- Kurihara, T. Effects of shelf-sea environments upon the spatial distribution of the subtidal starfish Asterina pectinifera (Müller & Troschel). The 9th Southern African Marine Science Symposium, Cape Town, 21-23 November 1996.
- Maharavo, J. Les récifs coralliers de Madagascar: localisation, menab et état de santé. Conference internationale sans le Gestion Integree de la zone Côtière - Nosy-Be Madagascar, October 1996. (In this paper, I speak about proliferation of Diadema setosum and Echinometra mathaei on coral reef in the north-west coast of Madagascar.
- Thandar, A.S. 1996. A new species of the holothuroid genus Paracucumaria (Echinodermata) from deep waters of the west coast of South Africa. ZSSA Symposium, Integrating Zoology and Subdisciplines, University of Pretoria, July, 1996.
- Thandar, A.S. 1996. Probable phylogeny of the families of dendrochirotid holothuroids (Echinodermata). 9th South African Marine Science Symposium, University of Cape Town, November 1996.

ASIA

- Evdokimov, V.V. Polyculture as a possible technique to clear the polluted waters and to increase a productivity of coastal communities. East Sea Oceanographic Conference (ESOC), October 14-16, 1997, Pusan, Korea.
- Evdokimov, V.V. Reproductive process and productive possibilities of hydrobionts in artificial and natural communities. 31st European Marine Biology Symposium, 1996, St. Petersburg, Russia.
- Evdokimov, V.V. Reproductive cycle of Buccinum vereruzeni in Petr Vellikij Bay (Japan Sea). East Sea Oceanographic Conference (ESOC), October 14-16, 1997, Pusan, Korea.
- Razee, H., and W.R. Allison. 1995. Environmental problems and regulation in the Maldives. Proceedings, SAARC Public Interest Law Conference, Colombo, Sri Lanka, Jan. 14-16.
- Tahera, Q., and I. Nayeem. Occurrence of the Echinoderm larvae in Pakistan waters. Workshop on Coastal Aquaculture, Pakistan, 23-25 April, 1996.

AUSTRALIA

- Goggin, C.L. The quest for biological control of the northern Pacific seastar, Asterias amurensis. Australian Marine Science Association Annual Conference, Hobart, Tasmania, Australia, 10-13 July 1996.
- Materia-Rowland, C. J. Marginaster littoralis Dartnall, 1970 (Echinodermata, Asteroidea). A Case Of Genetic Swamping By An Introduced Pest? Australian Marine Sciences Association (AMSA).
- Materia-Rowland, C.J. Coastcare: An example of Community Based Coastal and

- Marine Management. Australian Association of Environmental Education (AAEE), Hobart, Tasmania, Jan 1997.
- Materia-Rowland, C. J. Coastcare: An example of Community Based Coastal and Marine Management. Marine Education Society of Australasia (MESA), Hobart, Tasmania, Jan 1997.

#### CANADA

- Eble, G.J. 1995. Testing Higher-Taxon Innovation in Rugged Fitness Landscapes. 49th Evolution Meetings, Montreal.
- Juinio-Meñez, M.A.R., N. Macawaris and H. Bangi. Community based sea urchin pen culture as a resource management tool. North Pacific Symposium on Invertebrate Stock Assessment and Management; Nanaimo, British Columbia, Canada, March 6-10, 1995. (submitted to Can. J. Fish & Aquat. Sci.).
- Klinger, T.S., J.M. Lawrence, and A.L. Lawrence. Gut and gonadal growth of Strongylocentrotus droebachiensis (Echinodermata: Echinoidea) fed manufactured feeds. Aquaculture Canada '96, Ottawa, Canada, June 2-5, 1996.
- Kobayashi, N. Marine ecotoxicology with echinoderm life cycle. 22nd Annual Aquatic Toxicity Workshop, St. Andrews, N.B., Canada, 2-4 October 1995.

#### CARIBBEAN

- Wood, S.J., and S.K. Donovan. 1996. Accumulations of a curator: Lucas Barrett's collection in the Geology Museum, UWI. De la Beche Bicentennial Meeting, Kingston, Jamaica, 7th-8th June 1996.

#### EUROPE

- Eble, G.J. 1995. Testing the Role of Development in Evolutionary Radiations. 5th Congress of the European Society for Evolutionary Biology, Edinburgh.
- Gongadze, G. Stratigraphic value of the Late Cretaceous echinoids of the Caucasus and its place in the paleozoogeography of the Late Cretaceous of Europe. IV International Cretaceous Symposium, Hamburg, Germany, Sept. 26- Oct.4, 1992.
- Gongadze, G. Kaukasische Echinidenfauna an der Grenze von Maastricht und Danien. V International Cretaceous Symposium, Freiberg/Saxony, Germany, Sept. 16-24, 1996.
- Jagt, J.W.M. 1996. Echinoids and crinoids across the K/T boundary in the Maastrichtian type area. In: Bardet, N. and E. Buffetaut (eds). Séance spécialisée de la Société géologique de France. La limite Crétacé-Tertiaire: aspects biologiques et géologiques, Paris/Maison de la Géologie, 2-3 septembre 1996. Résumés, 1 pp.
- Jagt, J.W.M. 1997. New developments in the type Maastrichtian (Late Cretaceous). Meuse-Rhine Euregion Geologists Meeting at the Netherlands Institute of Applied Geoscience (NITG TNO), Heerlen, June 6-7, 1997.

- Abstracts, 1 pp.
- Jeffery, C.H. A tale of two clades: Differential survivorship in Holasteroids and Spatangoids at the Cretaceous-Tertiary boundary. **Palaeontological Association Annual Meeting, Birmingham, U.K., December 1996.**
- Mitrović-Petrović, J., A. Maran. The palaeoecological characteristics of Barremian-Aptian Echinoidea of eastern Serbia (YU). **5th Yugoslav Ecological Congress, September 1996, Belgrade (YU).** Abstract p. 93.
- Mitrović-Petrović, J., A. Maran. Morphological characteristics of the genus Heteraster (Echinoidea) as indicators of behavior and living conditions. **5th Yugoslav Ecological Congress, September 1996, Belgrade (YU).** Abstract p. 94.
- Néraudeau, D., J. Thierry, and P. Moreau. 1995. Variations de la biodiversité des échinides en fonction des transgressions / régressions. in: Faune, Flore et Stratigraphie séquentielle. **Réunion spécialisée A.P.F., S.G.F., C.F.S. - Museum National d'Histoire Naturelle, Paris, 14-15 Décembre 1995.** Livre des résumés, p.41.
- Piepenburg, P., and M.K. Schmid. 1996. Seabed imaging in Greenland, Barents and Laptev seas (Arctic). **International Workshop on in-situ Imaging Methods in Antarctic Ecology, Bremerhaven (Germany). 12-14 August.**
- Roccheri, M.C., L. Bosco, G. Barbata, F. Cardinale, C. Tipa, K. Onorato, D. Cascino, and G. Giudice. Induzione di apoptosi negli embrioni di riccio di mare. **Atti del Convegno Congiunto ABCD, AGI, SIBBM. Riccione (RN) 2-5 ott., 1996, pag. 17.**
- Sconzo, G., F. Geraci, G. Giudice, R. Melfi, G. Spinelli, D. Cascino, G. Toia, R. Sirchia. Analisi del promotore del gene 'heat shock' hsp70 IV e caratterizzazione del fattore di trascrizione HSF. **Congresso Nazionale Associazione di Biologia Cellulare e del Differenziamento (1996) 39. Riccione (RN).**
- Sconzo, G., F. Geraci, G. Giudice, R. Melfi, G. Spinelli, D. Cascino, G. Toia, R. Sirchia. Heat shock HSP70 IV promoter analysis and HSF characterization. **Development, Cell Differentiation and Cancer, International Society of Differentiation (1996) 122. Pisa.**
- Villier, L., and G. Breton. Biostratigraphie des Astérides dans le Campanien stratotypique [poster]. **La Craie: objet géologique, réservoir, matériau et paysage. Arras (Pas-de-Calais, France), 15, 16 Novembre 1996.**
- Zavodnik, D. Contributions to the marine fauna of Rijeka Bay (Adriatic Sea). 8. Echinoderms (Echinodermata). **Natural History Researches of the Rijeka Region, Rijeka (Croatia), 23-26 October 1996.**
- Zitt, J. 1997. Nearshore sedimentary environments and their record in echinoderm taphonomy (Cenomanian-Turonian boundary interval, Bohemian Cretaceous Basin). **Fifth International Cretaceous Symposium and Second Workshop on Inceramids. Freiberg, Germany, September 16-24, 1996.** Published in: Abstract Volume, p. 93. Freiberg.

#### GUAM

- Kerr, A.M. Effects of a typhoon on windward & leeward assemblages of holothuroids. **7th International Coral Reef Symposium, Guam, 1992. (poster).**



## ISRAEL

Melikov, O.H. Stages and historical development of sea urchin Minor Caucasus (Azerbaijan) Jurassic - Cretacea - Eocene. The Second International Symposium on the Geology of the eastern Mediterranean region. Jerusalem, Israel, Aug.27-Sept.1, 1995.

## JAPAN

Nojima, S. Ecological studies on the sea star, Astropecten latespinosus Meissner. VII. Foraging behaviour and feeding habits in experimental condition. 7th International Echinoderm Conference, 1990, Atami, Japan.  
Tominaga, H., and T. Kobayashi. One large spatangoid of the genus Metalia from the Amami Islands, south Japan. (in Japanese). 33rd meeting of the Japanese Society of Systematic Zoology, 1996.

## MEXICO

Nepote, A.C. Preliminary study of stony corals and echinoderms in Marietas Islands, Banderas Bay, Jalisco-Nayarit Mexico. XIII National Congress of Zoology, November, 1995. Morelia, Michoacan, Mexico.  
Torres Vega, J. Sistemática de los equinoideos (Echinodermata; Echinoidea) en las Campañas Oceanográficas proibe I a la V del Caribe Mexicano durante los años 1983-1986. XI Simposium Internacional de Biología Marina, en la Univesidad Autonoma de Baja California Sur, La Paz, B.C.S., November 1996.

## PHILIPPINES

Juinio-Meñez, M.A. and R. Dones. Reproduction of Salmacis sphaeroides in Bolinao, Pangasinan. Third National Symposium in Marine Science, May 23-24, 1994.

## SOUTH AMERICA

Fernandez, A.M.L., and L. de Meis. 1996. A novel  $\text{Ca}^{2+}$ -ATPase from sea cucumber muscle, potassium dependent and inhibited by ATP. VIII. Pan-American Association for Biochemistry and Molecular Biology, Púcon, Chile.  
Fernandez, A.M.L., A. Galina, and L. de Meis. 1996. Potassium dependent  $\text{Ca}^{2+}$  transport in a  $\text{Ca}^{2+}$ -ATPase vesicles from sea cucumber muscle. XXV Reunião Anual da Sociedade Brasileira de Bioquímica, Caxambú, MG, Brasil.  
Maier, M.S., A.J. Roccatagliata, and A.M. Seldes. New sulfated steroids of the ophiuroids Ophioplocus januarii and Ophionotus victoriae. XXII Congreso Latinoamericano de Química, XXI Jornadas Chilenas de Química.

**Concepción, Chile, 7-12 January 1996.**

- Maier, M.S., A.J. Roccatagliata, A.M. Seldes, S. Zea, J. Rojas, and C. Duque. Comparative study on the sterol content of ophiuroids Ophioplocus januarii, Ophionotus victoriae, Ophiocoma echinata and Ophiocoma wendtii. **XXII Congreso Latinoamericano de Química, XXI Jornadas Chilenas de Química. Concepción, Chile, 7-12 January 1996.**
- Parma, S.G. 1996. Equinoideos de las Formaciones Roca y El Fuerte (Daniano), Cuenca Neuquina y del Colorado, Argentina. **Congreso Paleógeno de América del Sur, Santa Rosa, La Pampa, Argentina, 1996, Resúmenes.**
- Roccatagliata, A.J., M.S. Maier, A.M. Seldes, H. Chludil, and V. Balzaretto. Isolation of steroidal compounds from the antarctic ophiuroid Astrotoma agassizi. **III Simposio Internacional Química de Productos Naturales y sus Aplicaciones Punta de Tralca, Chile, 4-7 December 1996.**
- Roccatagliata, A.J., M.S. Maier, and A.M. Seldes. Application of modern mass spectrometry technics to the study of novel natural products. **III Simposio Internacional Química de Productos Naturales y sus Aplicaciones Punta de Tralca, Chile, 4-7 December 1996.**

**UNITED STATES**

- Allison, W.R. 1990. The Discovery Bay Fisheries Improvement Project. Proceedings of, **The Gulf and Caribbean Fisheries Institute 42nd Meeting, November 1989.**
- Andacht, T. Possible Mechanism for the Inhibition of Fertilization Envelope Elevation by Nickel Chloride in the Sea Urchin, Lytechinus variegatus (Lamarck). **Developmental Biology of Sea Urchins X, Marine Biological Laboratory, Woods Hole, Massachusetts, March 6-10, 1996. (poster).**
- Beddingfield, S.D. Differential growth and nutrient allocation in the echinoid Lytechinus variegatus fed natural diets. **Annual Meeting of the American Society of Zoologists, American Microscopical Society, and The Crustacean Society, St. Louis, Missouri, 1994.**
- Beddingfield, S.D. Temporal and spatial patterns of dietary resource utilization in the echinoid Lytechinus variegatus. **72nd Annual Meeting of the Alabama Academy of Science, University of Alabama, Birmingham, Alabama, 1994.**
- Beddingfield, S.D., and J.B. McClintock. Temporal and spatial patterns of food resource utilization in the echinoid Lytechinus variegatus in contrasting habitats. **Annual Meeting of the American Society of Zoologists, American Microscopical Society, and The Crustacean Society, Washington D.C. American Zoologist 35:5, p.50A Abstract #208, 1995.**
- Beddingfield, S.D. Environmentally-induced catastrophic mortality of the sea urchin Lytechinus variegatus in shallow seagrass habitats of Saint Joseph's Bay, Florida. **21st Marine Benthic Ecology Meeting, The University of Connecticut, Mystic, Connecticut, 1994.**
- Beddingfield, S.D. Temporal and spatial patterns of dietary resource utilization in the echinoid Lytechinus variegatus. **22nd Marine Benthic Ecology Meeting, Institute of Marine and Coastal Sciences, Rutgers University, New Brunswick, New Jersey, 1995.**
- Brower, J.C. Growth and functional morphology of Pleurocystites squamosus Billings, an Ordovician rhombiferan echinoderm. **North American Paleontological Convention, Smithsonian Institution, Washington, D.C., June 1996.**

- Eble, G.J. 1995. A New Look at Temporal Patterns of Evolutionary Innovation: Cumulative Origination Functions. 27th Geological Society of America Meeting, New Orleans.
- Eble, G.J. 1996. Developmental and non-Developmental Morphospaces in Evolutionary Paleobiology. VI North American Paleontological Convention, Washington, D.C.
- Eble, G.J. 1996. Diversity as a Transient Phase in Macroevolution. 50th Evolution Meetings, Saint Louis, Missouri.
- Eble, G.J. 1996. Contrasting Morphological Diversification in Sister Clades: Holasteroid and Spatangoid Echinoids in the Mesozoic. 28th Geological Society of America Meeting, Denver.
- Johnsen, S. Damage due to solar ultraviolet radiation in the brittlestar Ophioderma brevispinum. Society of Integrative and Comparative Biology Annual Meeting, Albuquerque, New Mexico, December 26-30, 1996.
- Kerr, A.M. At least two major radiations of sea cucumbers onto coral reefs. Annual meeting of Am. Soc. Nat., Soc. Syst. Biol. & Soc. Stud. Evol., Colorado, 1997. (poster).
- Medeiros-Bergen, D. Distribution of Cucumaria frondosa larvae in relation to behavioural and physical factors. Benthic Ecology Meeting, Portland, Maine, 1997.
- Podolsky, R.D. Evolution of egg size in free-spawning marine invertebrates: consequences of accessory structures for fertilization. American Society of Zoologists, Wash. D.C., December 1995.
- Podolsky, R.D. External investments and the fertilization success of free-spawned eggs. Western Society of Naturalists, Port Townsend, WA, January 1996.

\*\*\*\*\*

Papers presented at the Fourth International Temperate Reef Symposium, Santiago de Chile, 21-25 July 1997.

(contributed by J.M. Lawrence)

- Branch, G.M., E. Day, and S. Mayfield. Sea urchins and lobsters: vital impacts on juvenile abalone.
- Vasquez, J., and M.A. Vega. Ecological patterns of subtidal seastars in northern Chile.
- Witman, J.D., S.J. Genovese, J.F. Bruno, and B. Pavlin. Macroecology in the subtidal zone: community effects of an unusual recruitment event. (echinoids and asteroids)
- Lawrence, J.M., M. Byrne, L. Harris, B. Keegan, S. Freeman, and B.C. Cowell. Sublethal predation in Asterias amurensis (eastern Bering Sea and southwestern Pacific), Asterias rubens (northeastern Atlantic Ocean) and Asterias vulgaris and Asterias forbesi (northwestern Atlantic Ocean) (Echinodermata: Asteroidea)
- Lawrence, J.M., K.S. Naidu, J-C. Mahe, and F.C. Cahill. The asteroids Crossaster papposus, Leptasterias polaris, and Asterias rubens (Echinodermata: Asteroidea) and the Iceland scallop Chlamys islandica (Mollusca: Bivalvia) on the St. Pierre Bank, Grand Banks of Newfoundland.

**Annual Meeting of the Society for Integrative and Comparative Biology.**  
**1996. Albuquerque, New Mexico.** Abstracts published in *American Zoologist*  
1966. Volume 36. Number 5. (page after title).

(communicated by John M. Lawrence)

- Thomas, F.I.M., & M.A. Sewell. Physical processes in reproduction: The role of jelly coats on echinoid eggs. 6A
- Johnsen, S. The effect of solar ultraviolet radiation on the brittle star Ophioderma brevispinum. 7A
- Leddy, H.A., & A.S. Johnson. Walking versus breathing: mechanical characteristics of sea urchin tube feet associated with differential function along an oral-aboral gradient. 9A
- Podolsky, R.D. Egg size and fertilization success: An analysis of selection on correlated characters. 11A (echinoids)
- Levitan, D.R. Distribution, abundance and water flow influence fertilization success in natural assemblages of sea urchins. 12A
- Birenheide, R., & T. Motokawa. Contractability of crinoid connective tissue. 27A
- Motokawa, T., R. Birenheide, T. Takahashi, M. Ohtani, & Y. Muneoka. Neuropeptides that modulate the mechanical properties of sea cucumber dermis. 28A
- Jacobs, M.W. Separating the effects of temperature and viscosity in particle capture by a suspension feeding brittlestar. 33A
- Beardsley, A.M., J.M. Colacino, & J. Gelin. In situ respiration rates and behavioral responses to declining pO<sub>2</sub> of the burrowing ophiuroid Hemipholis elongata. 37A
- Davidson, L.A., G.F. Oster, R.E. Keller, & M.A.R. Koehl. Mechanics of primary invagination during sea urchin gastrulation. 55A
- Ellers, O. Mediation of growth by collagenous tissues. 57A
- Etnier, S.A. Flexibility in comatulid crinoid arms. 59A
- Balser, E.J. Mortensen vs. MacBride: Evidence for asexual reproduction in ophiuroid larvae. 70A
- Jaekle, W.B., & E.J. Balser. Coelomic and blastocoelic circulation of nutrients in planktotrophic larvae of asteroid echinoderms. 71A
- Lickey, A.L., & W.E. Dobson. Effects of environmental factors on ossicle banding patterns in Microphiopholis gracillima. 72A
- Emlet, R.B. Functional morphology and the evolution of larval body plans. 77A (Echinoderms)
- Wasson, K.M., & S.A. Watts. Use of finasteride for evaluating the role of steroids in the gonads of the echinoid Lytechinus variegatus. 99A
- Boettger, S.A., & A.W. Pike. Effects of bacterial infections on Echinus esculentus. 106A
- Lambert, D.M., & L.G. Harris. Larval settlement of the green sea urchin Strongylocentrotus droebachiensis in the southern Gulf of Maine. 107A
- Pearse, V.S., & J.S. Pearse. Discovery of an accessible population of Ophiocanops, off NE Sulawesi, Indonesia. 110A
- Janies, D.A. Evolution and taxonomic status of a recently discovered abyssal echinoderm group, the concentricyroids. 133A



## HOW I BEGAN TO STUDY ECHINODERMS ... PART 7.

Rowe, Frank W.E. - (Goldbrook Boarding Kennels, Hoxne, Suffolk, U.K.)

For someone born under the astrological sign 'Pisces' (!! ) and who lived his childhood by the sea on the north cornish coast, an early interest in echinoderms might have been expected! Such was NOT the case, for distant memories of school party visits to the shore were ones of an attitude of sheer boredom!!! This was all to change when I was invited to join the Zoology Department of the Natural History Museum in London as assistant to a certain Miss A.M. Clark. Duly, on Monday, October 3rd, 1960, I arrived in the echinoderm section. However, it was not until the next day (Ailsa worked on a Saturday instead of a Monday!) that I was to meet the person who was to instigate and inspire my career in echinoderm studies! But not even that yet! For, I recall my first job was to incorporate (write into a register and label - all good quill and ink stuff!) a collection of Antarctic ascidians (Ailsa was also responsible for these collections) and subsequently to spend a short time with Dr. Robin Millar (Millport, Scotland) learning the basics of ascidian identification! In the meanwhile, back at the camp, Ailsa decided we should prepare a monograph of the shallow-water echinoderms of the Indo-west Pacific region. I was set the tasks of searching the literature and tabulating the records and preparing the section covering the generic keys for the Holothuroidea. Concurrent curation duties included relabelling (by hand) the complete echinoderm collection. It was through this very basic duty that I became so familiar with, and fascinated by, firstly the shape and varied form of the living classes (even the holothurians!!) and then the scientific names associated with them. I recall, even now, my first echinoderm identification when I found a flat, pentagonal starfish in the bottom of a jar of holothurian specimens collected from Sri Lanka (then Ceylon)! Ailsa encouraged me to identify the specimen, which I did correctly as Asterina sarasini! So, through the encouragement and guidance of Ailsa Clark my career seemingly had become set!

My next great pleasure was in meeting, by correspondence, Dave Pawson, with whom I was then to write my first descriptive holothurian paper and who became such a supportive and continuing influence on my career and, more especially, such a firm friend.

At about the same time I resigned from the N.H.M. to complete my first and second degrees (my PhD thesis being one on sponge biology!!), though never losing touch with the echinoderm section (e.g. Review of the Holothuroidea). Next came a short period at

the Royal Albert Memorial Museum in Exeter and the privilege of examining Percy Sladen's collection (e.g. Report on Sladen Collection) as well as enjoying the company of David and Anne Nichols. This post was meant to last at least 3 years, but was cut short following the offer of a research post in the Australian Museum in Sydney, which later I joined in January, 1974.

Fifteen years, and a certain Xyloplax later, I decided to more or less hang up my podia for a quieter life running a dog kennel!!! Well, even that ambition has been partially thwarted! Early on in our time here I was walking our two dogs across an adjacent ploughed field only to find - you have guessed it? - an internal mould of an Echinocorys staring up at me from the plough (well-known for Cretaceous fossils). Even my long suffering wife, Mary, has conceded I cannot be released from my commitment to the Echinodermata, even in the midst of the East Anglian countryside!!!

I continue to identify small collections of specimens and photographs, when time permits, and continue my interest in the echinoderm scene whenever and wherever possible. I have so many colleagues and friends, made along the way, to thank for making my career such a happy, exciting and even now continuing one. Echinoderms are indeed the most fascinating creatures and the most rewarding to study and I feel very fortunate to have been involved!

\*\*\*\*\*

**Abigail M. Moore** (Hull University, U.K.)

Well it really all began by chance. I discovered coral reefs in Florida a few years ago, and instantly fell deeply in love... after a trip to the Red Sea, my (now ex-) husband didn't want to go on another coral reef holiday, so in Sept 1995 I joined an Operation Wallacea Expedition, as I really wanted to learn more. There I really loved the practical survey work, and I saw that it was possible to do what I had always dreamed of, and actually work in such an environment. When I was offered the opportunity to do an MSc (in Global Biodiversity, Monitoring and Conservation), with the project of surveying the Holothurians of the area where I had been on expedition, which is now the Wakatobi Marine National Park, I jumped at it immediately. Then I had to learn how to do it... All I knew about holothurians at this stage was how to recognise a few common species from the field guide we were using. I have since learned enough to know I cannot hope to learn more than a fraction of the available knowledge, and that even what is known is only scratching the surface of what there is to know about these fascinating

creatures. I have had a lot of help from Dr. Claude Massin of the IRSNB and Sven Uthicke, currently at AIMS. I don't know whether I shall continue in this field after the MSc is completed, but certainly I have developed an enduring interest in holothurians, and I shall always be keeping my eye open for them even when doing other work or even just relaxing in the water. I am never so happy as when in, on, under or by the sea... As well as the MSc course, I have now become a SCUBA instructor (PADI and BSAC) and will soon have my Yachtmaster Commercial Endorsment... so I should be able to find some work in a coral reef area. Eventually I would like to consider a PhD, if I can find funding for a suitable project.

\*\*\*\*\*

**Materia-Rowland, Christine** (Dept. of Environment and Land Management, Coastal and Marine Program, Hobart, Tasmania)

In 1986 I was undertaking a Bachelor of Applied Science Degree in Melbourne, Australia and was introduced to Mark O'Loughlin via a mutual friend. Mark assisted me with a minor research paper by providing a valuable critique of the work. I was invited to join him on a field excursion to a small Bay on Phillip Island in Victoria. It was on this first trip that we collected specimens of the cucumariid Staurothyone inconspicua which was brooding juveniles. From there I began attending Museum of Victoria volunteer work days where I spent my time curating the echinoderm collection. My interest and intrigue in these animals developed and we began making monthly trips to the Island to collect further specimens. Ten years and two children on since that first field trip I have collected thousands of specimens for the research collections of the Museum. I continue to work periodically on the group finding them incredibly interesting and diverse. I am grateful to Mark for the opportunities he provided in those early days and for where it has taken me.

\*\*\*\*\*

**Susan Hottenrott** (George Washington University, Washington D.C., Smithsonian Institution, Washington D.C.)

My father, whose training is in physics, often wonders aloud to me how I could possibly study such slimy creatures. I wish I could express how rewarding it is to work with echinoderms, and how most aren't particularly slimy at all! But alas, my poor father is also still trying to get my mother to dispose of the numerous bags of seashells I collected as a child during our

summer vacations in Maryland. I don't think he is prepared to hear about the wonderful world of echinoderms just yet.

When I am asked how I got started in this field, I have to think back to the oyster and clam shells I hunted for at the beach when I was little: the bigger, the better. Ultimately I searched for tiny little gastropods in shell hash. I often looked at the other kids (still picking up those big clam shells) and silently laughed at them for what they were overlooking. I am grateful that I was never forced to experience what it was like to have to leave my collection behind like so many other children. My parents let me take them all home, where they sit to this day.

During the school year I would continue with my scientific endeavors. I passed through a number of phases, not (unfortunately) recalled in a glorious list of publications, but in the titles of my elementary school science fair projects: "Fungi in My Backyard" was a favorite of the judges. Of course, I defined my backyard a bit broadly and had my mother drive me around to other backyards in which I had eyed some huge fungus growing on a tree as I passed by on the school bus. In contrast, "Fossils of Dutchess County, New York" featured a number of fine brachiopods, collected solely from my front yard (quite the incomplete fossil record).

It is no surprise to me or my family that I have pursued an interest in systematic biology. The only question for me was what kind of creature would catch my eye for good. That moment came while I was on a summer course offered at the George Washington University entitled 'Tropical Marine Biology on the Island of San Salvador, Bahamas.' We had an unusual half day free from work. Our options were either to go to the beach or into a cave which, though marine, had a terrestrial entrance about half a mile inland. The cave, home to numerous bats, was cold, dark and had a guano based food web ("you'll never get it out of your clothes"). I weighed my options and headed straight for the beach to snorkel and add a few specimens to my shell collection. Soon after, two of the instructors of the course came hurriedly down the path with a small vial and cries of "look what we found!" It was a tiny white brittle star. I looked at this specimen back in the lab along with the other students before it began to autonomize and was preserved. No one had any clue what it was, and it was particularly unusual since extensive studies of the cave had never before revealed the presence of ophiuroids. I became quite interested in the prospect of working on identifying the ophiuroid as an independent study project for the upcoming semester.

When I returned to Washington D.C., the professor, Bob Knowlton, took me over to meet Dave Pawson at NMNH. Dave invited me to work at the museum and use the collections to try and identify the specimen. To this day, no one ever has. I have been back to

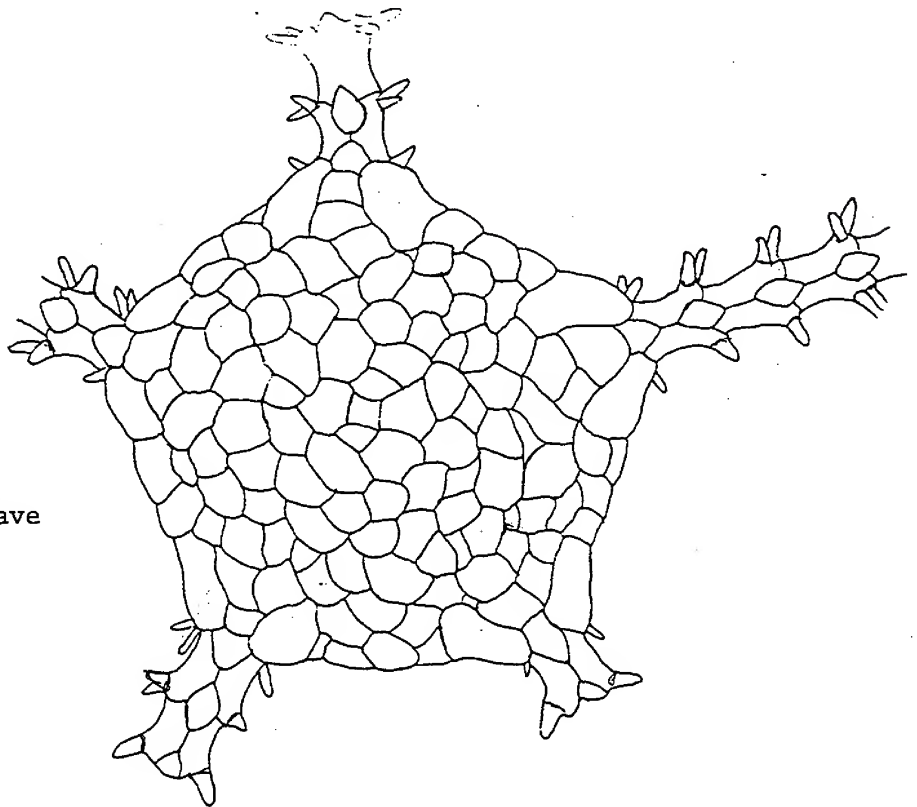


the cave once to search for additional specimens, but with no luck (the class, incidentally, will be offered next summer and I will hunt once again). But the experience at the museum was all I needed to find my niche. I worked on a cladistic analysis of the scolopendrina group of Ophiocoma during my senior year. I am now a Ph.D. student at George Washington University, which in the few years since I received my B.S. has inaugurated an excellent graduate program in systematic biology. I work at NMNH on the deep sea ophiuroid genera Ophiomusium and Ophiosphalma, as well as other genera in the Ophiolepididae. I plan a revision of Ophiomusium and Ophiosphalma, plus a cladistic analysis of the genera and of the family. I am interested in the evolution of these deep sea forms, which have also been identified as possible cases of progenesis. A phylogeny will allow me to investigate these theories.

Thanks to an NSF Dissertation Improvement Grant, I have been traveling to many collections around the world in search of key specimens. I have been able to finally put faces with some of the names listed in this newsletter, and that has been as enjoyable as finding the specimens (perhaps only a systematist knows how enjoyable that actually is!). Many thanks to all of you (a list would be far too long) who have helped me sort through your collections and who have loaned material to me. It will be invaluable for my study.

unknown Ophiurinae  
from Bahamian cave

- Susan Hottenrott



## ASSESSMENT OF ECHINODERMS COLLECTION AT BISHOP MUSEUM

I was asked by the Bishop Museum to visit, assess their echinoderm collection and make the community aware of the holdings and their potential for research. The collection is made up of primarily Hawaiian/North Pacific fauna and was formerly curated by Dennis Devaney until his disappearance in 1981. Since then a substantial amount of material has been added. Much of it was added from collections by the Hawaiian Undersea Research Laboratory (HURL) and collected by the Townsend Cromwell by Beatrice and Tom Burch. Deep-water holdings of echinoids, asteroids and ophiuroids are especially strong (strength of holdings prioritized from first to last.) A well-curated collection with many specimens curated by Frank Rowe, of shallow-water holothurians is present. Crinoids were omitted from my survey. A breakdown of the holdings follows.

### ECHINOIDEA

An outstanding collection of Hawaiian and N. Pacific deep-water cidaroids! Many different sizes and different taxa. Many of these cidaroids have barnacles on the spines for those interested. Some of the less common cidaroids are there as well. They also have two different types of echinothurioids-that I couldn't identify. Other various taxa include: Aspidodiadematis, good collection of spatangoids, various sand dollars (esp. Laganum fudsiyama) and of course a lot of the shallow-water Hawaiian critters. Echinometridae (Colobocentrotus, Echinometra, H. mammillatus and a good collection of H. trigonarius), diadematis-including Lissodiadema, Chaetodiadema, Diadema, and Echinothrix.

### ASTEROIDEA

Just about all of the taxa from Fisher, 1906 can be found at the Bishop Museum. Except for most of the brisingidans (except H. fragilis) and REALLY rare taxa-myxasterids, etc.

Highlights include the second ever specimen of Gilbertaster anacanthus Fisher, and representatives of almost all deep-water Hawaiian asteroids. Strong holdings in goniasterids and astropectinids. About 5 or 6 new additions to the Hawaiian fauna-including range extensions and some new taxa to be published later. Some of the more unusual taxa include Henricia robusta, H. pauperrima, Anseropoda insignis, Zoroaster spinulosus, Sclerasterias euplecta, Tarsastrocles verrilli. Plus many more.

## OPHIUROIDEA

The ophiuroid collection is heavy on ophiocomids-Dr. Devaney's group of expertise. Preps and voucher specimens can be found in the collection for his papers on the Ophiocomidae. The Ophiocomids are impressive and take up almost half of the entire brittle star collection! The collection has good holdings in mostly shallow-water but also some deep-water Hawaiian taxa.

Taxa of note: Ophiotholia, Asteroschema sp., Ophiomusium, Ophiura ursula, Ophiura monaria and some euryalid-type ophiuroids, including some gorgonocephalids that I couldn't identify.

## HOLOTHUROIDEA

Most of these are shallow-water critters- next to no deep-sea holothurians that I could recognize as such (maybe 1 or 2 lots of cf. Elasiopoda?)

If you'd like to see the actual write-up feel free to send me an email and I'd be happy to FAX, email or snail mail it to you. Its a very important collection and aside from the National Museum which houses all the vouchers, types, etc. from the early Albatross expeditions it has one of the most important collections of Hawaiian shallow and deep-water echinoderms.

Please keep in mind I am at California Academy of Sciences and not Bishop Museum. Loans should be forwarded to their Invertebrate Zoology Section c/a Lu Eldredge.

Respectfully submitted,  
Chris Mah

Curatorial Assistant and Graduate Student  
Department of Invertebrate Zoology and Geology  
California Academy of Sciences  
email: clmah@sfsu.edu or cmah@cas.calacademy.org

# ECHINODERM SPECIALIST 'KEYWORD' LIST

ABREU, MERCEDES	OPHIUROIDEA
AHEARN, CYNTHIA	TAXONOMY HOLOTHUROIDEA
ALI, MOHAMED SAID	ECHINOIDEA TERTIARY MESOZOIC
ALLÉN, JOHN	BIODIVERSITY FUNCTIONAL-MORPHOLOGY
ALLISON, WILLIAM	TAXONOMY ECOLOGY BIOGEOGRAPHY FORAGING ASTEROIDEA
AMEZIANE-COMINARDI, NADIA	CRINOIDEA
ANDACHT, TRACY	ECHINOIDEA DEVELOPMENT RECRUITMENT SETTLEMENT METAMORPHOSIS
ANDERSEN, AASMUND	ECHINOIDEA
ANDERSON, ROLAND	TAXONOMY AQUARIUM-HUSBANDRY NATURAL-HISTORY
ARCHER, JEFFREY	LARVAL-BIOLOGY REPRODUCTIVE-BIOLOGY
ARISOLÁ, AMELIA	CULTURE MEDICINAL-VALUE BIOLOGY
ARONSON, RICHARD	OPHIUROIDEA
AUSICH, WILLIAM	CRINOIDEA TAPHONOMY PHYLOGENY TAXONOMY
BALSER, ELIZABETH	HOLOTHUROIDEA MORPHOLOGY DEVELOPMENT PHYLOGENY PHYSIOLOGY
BARTSCH, ILSE	OPHIUROIDEA
BASCH, LARRY	LARVAE JUVENILES REPRODUCTION ECOLOGY EVOLUTION
BAUER, JOHN	ECHINOIDEA DISEASE BACTERIA-(PATHOGENS) TEMPERATURE
BAUMILLER, TOMASZ	CRINOIDEA ISOCRINIDS FOSSIL RECENT
BAZHIN, ALEXANDER	ECHINOIDEA POPULATION
BEAVER, HAROLD	BLASTOIDS MORPHOLOGY SYSTEMATICS
BECKER, JOHANN	FAUNISTICS TROPICAL-SUBTROPICAL-SOUTH-ATLANTIC OCEANIC-ISLANDS
BEDDINGFIELD, STEVE	ECOLOGY ENVIRONMENTAL-INFLUENCES REPRODUCTION BIODIVERSITY
BEGBIE, KIRSTEN	OPHIUROIDEA
BELL, BRUCE	EDRIOASTEROIDS TAXONOMY FUNCTIONAL-MORPHOLOGY
BENEJAM DE SUAREZ, CARLA	TAXONOMY REPRODUCTIVE-TECHNIQUE
BENTLEY, ANDREW	ECHINOIDEA GENETICS BIOLOGY PALAEOLOGY
BERGEN, MARY	HOLOTHUROIDEA TAXONOMY
BERTRAM, DOUGLAS	ECHINOIDEA LARVAE EVOLUTION ECOLOGY DEVELOPMENT
BIRENHEIDE, RUDIGER	CRINOIDEA
BIRKELAND, CHARLES	CORAL-REEF-ECOSYSTEM-MANAGEMENT
BIRYUKOVA, INGA	CHEMORECEPTION SENSORY-SYSTEMS MIGRATIONS
BLACK, W. ROBERT	ECHINOIDEA FUNCTIONAL-MORPHOLOGY ECOLOGY
BLAKE, DANIEL	ASTEROIDEA PHYLOGENY PALEOECOLOGY
BLUHM, BODIL	POPULATION-DYNAMICS AGEING
BOCKELIE, JOHAN	FOSSIL CRINOIDEA
BORZONE, CARLOS	POPULATION-DYNAMICS ECOLOGY CULTURE
BOSCH, ISIDRO	LARVAL-ECOLOGY UV-PHOTOBIOLOGY
BOUDOURESQUE, CHARLES	POPULATION-DYNAMICS FEEDING-BEHAVIOUR ECHINOIDEA
BRAY, RICHARD	OPHIUROIDEA ECOLOGY MICROSTRUCTURE
BREGMAN, YURY	AGE-STRUCTURE GROWTH ARTIFICIAL-FOODS
BRETON, GERARD	ASTEROIDEA MESOZOIC CENOZOIC EVOLUTION TAPHONOMY
BREWIN, PAUL	ECHINOIDEA
BREY, THOMAS	GROWTH MORTALITY PRODUCTIVITY TROPHIC-LINKS
BROWER, JAMES	PALEOBIOLOGY PALEOZOIC CRINOZOA BLASTOZOA
BUITRON-SANCHEZ, BLANCA	FOSSIL CENOZOIC ASTEROIDEA ECHINOIDEA
BURCH, BEATRICE	BIODIVERSITY WEST-COAST-NORTH-AMERICA DEPTHS-BEYOND-REEFS-IN-TROPICS
BUSSARAWIT, SOMCHAI	TAXONOMY ECHINODERMS ANDAMAN-SEA
BUSTER, PETER	STRATIGRAPHY DISTRIBUTION
BYRNE, MARIA	DEVELOPMENT REPRODUCTION EVOLUTION FUNCTIONAL-MORPHOLOGY
CALTAGIRONE, ANGELA	ECOLOGY AQUACULTURE MEDITERRANEAN
CAMERON, R. ANDREW	ECHINOIDEA GENETICS DEVELOPMENT
CAMPBELL, ALAN	ECOLOGY POPULATION FISHERY ECHINOIDEA HOLOTHUROIDEA
CAMPBELL, ANDREW	ULTRASTRUCTURE PHYSIOLOGY TAXONOMY ZOOGEOGRAPHY
CAMPBELL, DAVID	ASTEROIDEA PREDATION SYSTEMATICS BEHAVIOR ECOLOGY
CANDIA-CARNEVALI, M. DANIELA	ECHINOIDEA OPHIUROIDEA CRINOIDEA
CANNON, LESTER	ECHINODERM-HOSTS-PARASITES
CARDER, NANCY	TAXONOMY
CHAO, SHYH-MIN	ASEXUAL-REPRODUCTION POPULATION-ECOLOGY LIFE-HISTORY SYSTEMATICS
CINTRA BUENROSTRO, CARLOS	BIOGEOGRAPHY TAXONOMY ECOLOGY EVOLUTION
COLON-JONES, D. ELIZABETH	REARING POPULATION ECOLOGY
CONAND, CHANTAL	ECOLOGY EXPLOITATION BIOEROSION BIOTURBATION
CREASER, EDWIN	MANAGEMENT MONITORING-C/E REGULATION SUSTAINED-YIELD
CRUMP, ROBIN	ASTEROIDEA EMBRYOLOGY ECOLOGY BEHAVIOUR
CUTRESS, BERTHA	HOLOTHUROIDEA SYSTEMATICS MORPHOLOG GEOGRAPHICAL-DISTRIBUTION
DAFNI, JACOB	ECHINOIDEA
DAVID, JEROME	STALKED-CRINOIDS ONTOGENY BATHYMETRY
DAVOULT, DOMINIQUE	OPHIUROIDEA PRODUCTION REPRODUCTION SUSPENSION-C-AND-N-FLUXES
DAYTON, PAUL	ECOLOGY ECHINOIDEA OPHIUROIDEA ASTEROIDEA
DE RIDDER, CHANTAL	ECHINOIDEA MORPHOFUNCTIONAL-ADAPTATIONS SYMBIOSES EVOLUTION
DE WIT, WALTER	ECHINOIDEA FLINT-PLEISTOCENE-DEPOSITS
DEAN, JULIETTE	ECHINOIDEA FOSSIL
DEARBORN, JOHN	CRINOIDEA OPHIUROIDEA ASTEROIDEA FUNCTIONAL-MORPHOLOGY ECOLOGY TAXONOMY



DEBENHAM, PATTY  
 DEL VALLE, ROSA  
 DEVIN, MICHAEL  
 DIEHL, WALTER  
 DOBSON, WILLIAM  
 DOLMATOV, IGOR  
 DOMINGUEZ ALONSO, PATRICIO  
 DONOVAN, STEPHEN  
 DRUMMOND, ANNE  
 EBLE, GUNTHER  
 ELISEIKINA, MARINA  
 ELLERS, OLAF  
 EMLET, RICHARD  
 ETNIER, SHELLEY  
 ETTENSÖHN, FRANK  
 EVDOKIMOV, VLADIMIR  
 FEDER, HOWARD  
 FELDMAN, ABBY  
 FELL, F. JULIAN  
 FERAL, JEAN-PIERRE  
 FERGUSON, JOHN  
 FERNANDEZ, CATHERINE  
 FLAMMANG, PATRICK  
 FOLLOSCO, MINDA  
 FORET, TIMOTHY  
 FOSTER, MERRILL  
 FOX, DAVID  
 FREEMAN, STEVEN  
 FUJITA, TOSHIHIKO  
 GAGE, JOHN  
 GAGNON, JEAN-MARC  
 GAHN, FOREST  
 GALLÉMI, JAUME  
 GEBRUK, ANDREY  
 GENTIL, FRANK  
 GEORGE, SOPHIE  
 GIBSON, MICHAEL  
 GIL CID, DOLORES  
 GINANOVÁ, TALIA  
 GIUDICE, GIOVANNI  
 GLUCHOWSKI, EDWARD  
 GOGGIN, LOUISE  
 GONGADZE, GURAM  
  
 GOODING, RICHARD  
 GOUVEIA-MONTEIRO, ANA MARIA  
 GRABOWSKY-KAAIALII, GAIL  
 GREENSTEIN, BENJAMIN  
 GROSJEAN, PHILIPPE  
 GROVES, CATHY  
 GRYGIER, MARK  
 GUDMUNDSSON, JON  
 GUERRAZZI, MARIA  
 GUILLOU, MONIQUE  
 GURREA, ISIDRE  
 GUTT, JULIAN  
 HADEL, VALERIA FLORA  
 HAGEN, NILS  
 HAMEL, JEAN-FRANCOIS  
 HAMZA HASSAN, MOHAMED  
 HAUDE, REIMUND  
 HAVARDSSON, BJORGOLFUR  
 HEINZELLER, THOMAS  
 HENDLER, GORDON  
 HERDENDORF, CHARLES  
 HESS, HANS  
 HIGHSMITH, RAYMOND  
 HILL, ROBERT  
 HOBERG, MAX  
 HOLTERHOFF, PETER  
 HOOD, SARAH  
 HOOPER, ROBERT  
 HOROWITZ, ALAN STANLEY  
 HOSHI, MÔTONORI  
  
 HOTCHKISS, FREDERICK  
 HOTTENROTT, SUSAN  
 IRIMURA, SÉIICHI  
  
 ECHINOIDEA  
 HOLOTHUROIDEA  
 ECHINOIDEA SEA-URCHIN-AQUACULTURE DEEP-SEA-SPECIES-DIVERSITY  
 INVERTEBRATES GROWTH  
 OPHIUROIDEA ECOLOGY  
 REGENERATION-MECHANISMS MORPHOLOGY DEVELOPMENT ECOLOGY  
 PALAEOBIOLOGY MORPHOLOGY CARPOIDEA  
 CARIBBEAN-ECHINOIDEA ORDOVICIAN-CRINOIDEA  
 ECHINOIDEA ECOLOGY REPRODUCTION LIFE-HISTORY  
 BIODIVERSITY DEVELOPMENT EVOLUTION  
 REGENERATION-MECHANISMS MORPHOLOGY IMMUNOLOGY  
 ECHINOIDEA BIOMECHANICS EVOLUTION ECOLOGY  
 LARVAE SEA-URCHINS PLANKTONIC-FORMS DEVELOPMENT  
 CRINOIDEA  
 TAXONOMY FUNCTIONAL-MORPHOLOGY PALEOECOLOGY CRINOIDEA  
 ECHINOIDEA GAMETOGENESIS POLYCULTURE MONOCHROMATIC-LIGHT  
 DISTRIBUTION FEEDING-BIOLOGY PREDATOR-PREY-INTERACTIONS  
 LARVAE ASTEROIDEA ECHINOCULTURE  
 GROWTH TAXONOMY BIOGEOGRAPHY ANTARCTICA  
 SPECIATION EVOLUTION DEVELOPMENT BIODIVERSITY-GENE MOLECULAR-PHYLOGENY  
 PHYSIOLOGY FUNCTIONAL-ANATOMY  
 NUTRITION GROWTH AQUACULTURE  
 MORPHOLOGY BIOCHEMISTRY ADHESION PODIA  
 CULTURE BIODIVERSITY  
 SYMBIOSIS DISEASE BIOASSAYS REGENERATION ASTEROIDEA  
 TAXONOMY BIODIVERSITY ECOLOGY EVOLUTION  
 OPHIUROIDEA OSSICLES BEHAVIOR  
 ASTEROIDEA PREDATION SUBLITTORAL POPULATION  
 OPHIUROIDEA ASTEROIDEA ECOLOGY TAXONOMY  
 DEMOGRAPHY GROWTH BIODIVERSITY  
 ECOLOGY BEHAVIOUR BIOTURBATION TAXONOMY  
 CRINOIDEA PALAEOBIOLOGY  
 ECHINOIDEA CRETACEOUS SYSTEMATICS BIOSTR PALAEOECOLOGY  
 HOLOTHUROIDEA TAXONOMY  
 OPHIUROIDEA POPULATION  
 ECOLOGY BIOCHEMISTRY BEHAVIOUR MORPHOLOGY  
 PALEOECOLOGY BIOTIC-INTERACTIONS DEVONIAN  
 PALAEOBIOLOGY PALAEOECOLOGY MORPHOLOGY CRINOIDEA CARPOIDEA CYSTOIDS  
 MUSCLE-REGENERATION-MECHANISMS  
 MOLECULAR-BIOLOGY DEVELOPMENTAL-BIOLOGY  
 CRINOIDEA FOSSIL  
 ASTEROIDEA PATHOLOGY PARASITES BIOLOGICAL-CONTROL  
 ECHINOIDEA LATE-CRETACEOUS PALEOGENE EVOLUTION SYSTEMATICS PALEOBIOGEOGRAPHY  
 STRATIGRAPHY  
 ECHINOIDEA DIADEMATID-ASSOCIATIONS  
 OPHIUROIDEA  
 EVOLUTION BIOMECHANICS DEVELOPMENT DISPERSAL ECOLOGY  
 ASTEROIDEA ECHINOIDEA TAPHONOMY FOSSIL RECENT CROWN-OF-THORNS STARFISH  
 GROWTH POPULATION-DYNAMIC MODELLING AQUACULTURE  
 ASTEROIDEA BIOGEOGRAPHY SYSTEMATICS  
 PARASITOLOGY ASSOCIATED-CRUSTACEANS HOSTS-FOR-MYZOSTOMIDA GALLS-AND-CYSTS  
 ECHINOIDEA ECOLOGY POPULATION  
 ASTEROIDEA  
 ECOLOGY ECOTOXICOLOGY PLASTICITY BIODIVERSITY  
 FOSSIL ECHINOIDEA CRETACEOUS CENOZOIC MEDITERRANEAN-REGION  
 BIODIVERSITY ECOLOGY  
 HOLOTHUROIDEA  
 ECHINOIDEA ECOLOGY DISEASE CULTIVATION  
 ASTEROIDEA HOLOTHUROIDEA OPHIUROIDEA ECHINOIDEA BEHAVIOR REPRODUCTION MORPHOLOGY  
 ECOLOGY  
 TAXONOMY PALEOLOGY EVOLUTION  
 ECHINOIDEA  
 CRINOIDEA ULTRASTRUCTURE NEUROANATOMY  
 OPHIUROIDEA TAXONOMY BEHAVIOR FUNCTIONAL-MORPHOLOGY  
 ABYSSAL ASTEROIDEA BRISINGIDAE ECHINOIDEA  
 TAXONOMY PALEOECOLOGY TAPHONOMY CRINOIDEA  
 ECOLOGY REPRODUCTION COMMUNITY-ECOLOGY  
 COMPARATIVE-PHYSIOLOGY  
 TAXONOMY FEEDING-BIOLOGY-ECOLOGY BIODIVERSITY  
 CRINOIDEA FOSSIL PALEOECOLOGY SYSTEMATICS  
 TAXONOMY BIOGEOGRAPHY DEEP-WATER  
 ECHINOIDEA ECOLOGY AQUACULTURE CONSERVATION  
 FOSSIL BLASTOIDEA  
 ECHINOIDEA ASTEROIDEA FERTILIZATION ACROSOME-REACTION  
 GLYCOCONJUGATES SIGNAL-TRANSDUCTION  
 OPHIUROIDEA ECHINOIDEA ASTEROIDEA FOSSIL RECENT TERATOLOGY  
 OPHIUROIDEA SYSTEMATICS CLADISTICS  
 OPHIUROIDEA TAXONOMY MORPHOLOGY ECOLOGY

ISHIDA, YOSHIKI  
IVY, W. GRISILDA  
JABLONSKI, DAVID  
JACOBSEN, NANCY  
JAECKLE, WILLIAM  
JAGT, JOHN  
JAMES, DANIEL  
JAMIESON, GLEN  
JANIES, DANIEL  
JEFFERY, CHARLOTTE

JELL, PETER  
JELLETT, JOANNE  
JOHNSON, SONKE  
JUNIO-MENEZ, ANNETTE  
JUNQUEIRA, ANDREA  
KAMMER, THOMAS  
KAWAUCHI, GISELE YUKIMI  
KELLY, MAEVE  
KERR, ALEXANDER  
KEUSKAMP, DOM  
KLIKUSHIN, VLADIMIR  
KLINGER, THOMAS  
KNOTT, K. EMILY  
KOBAYASHI, NAOMASA  
KOGO, ICHIZO  
KRISHNARAJAH, PADMINI  
KURIHARA, TAKEO  
LAMBERT, PHILIP  
LANDEIRA FERNANDEZ, ANA MARIA

LANE, N. GARY  
LAWRENCE, JOHN  
LE MENN, JEAN  
LeCLAIR, ELIZABETH  
LEMBO, LUIZ  
LESSIOS, HARILAOS  
LEVERONE, JAY  
LIAO, YULIN  
LITVINOVA, NINA  
LORDSON, JINBERT  
MACURDA, JR., D.BRADFORD  
MACZYNSKA, STEFANIA  
MAH, CHRISTOPHER  
MAHARAVO, JEAN  
MAIER, MARTA  
MAKRA, ATHENA  
MALLEFET, JEROME  
MANNI, RICCARDO  
MANNIFIELD, KAY  
MARAN, ALEKSANDRA  
MARTINEZ, PRISCILLA  
MASCARENHAS, BERNARDO JOSE  
MASSIN, CLAUDE  
MATERIA-ROWLAND, CHRISTINE  
MATTOS-SEGOVIA, ELIO  
McBRIDE, SUSAN  
McCLINTOCK, JAMES  
McLELLAND, JERRY  
MEDEIROS-BERGEN, DOT  
MELIKOV, OKTAY HAMZA  
MERCIER, ANNIE  
MESSING, CHARLES  
MEYER, CHRISTIAN  
MINTZ, LEIGH  
MIRONOV, ALEXANDER  
MITROVIC-PETROVIC, JOVANKA  
MLADENOV, PHILIP  
MONTAGUE, CHRISTOPHER  
MOOI, RICHARD  
MOONEY, ROBERT  
MOORE, ABIGAIL

MORGAN, KATHERINE  
MORRILL, JOHN  
MOTOKAWA, TATSUO  
MOUCHATY, SUZETTE  
MUNK, ERIC

PALEOECOLOGY OPHIUROIDEA  
HOLOTHUROIDEA  
ECHINOIDEA CRINOIDEA FOSSIL  
ASTEROIDEA TAXONOMY DISTRIBUTION REPRODUCTION  
LARVAE PHYSIOLOGY ECOLOGY MORPHOLOGY  
TAXONOMY PALAEOBIOLOGY BIOZONATION FUNCTIONAL-MORPHOLOGY  
HATCHERY CULTURE TAXONOMY ZOOGEOGRAPHY HOLOTHUROIDEA  
BIODIVERSITY HABITAT-MODIFICATION SURVEY  
ASTEROIDEA EVOLUTION DEVELOPMENT  
ECHINOIDEA-PHYLOGENIES MORPHOLOGICAL & MOLECULAR ECHINOID-LARVAL-STRATEGY  
ECHINOIDS-OVER-THE-K-T-BOUNDARY  
FOSSIL CRINOIDEA ASTEROIDEA AUSTRALIAN  
IMMUNITY DISEASE  
PHOTORECEPTION ORIENTATION OPHIUROIDEA  
CULTURE MANAGEMENT POPULATION-GENETICS LARVAL-ECOLOGY  
REPRODUCTION RECRUITMENT SETTLEMENT POPULATION-DYNAMICS  
FOSSIL CRINOIDEA SYSTEMATICS PALEOECOLOGY  
HOLOTHUROIDEA APODIDA REPRODUCTION DISPERSION  
ECHINOCULTURE PSAMMECHINUS-MILIARIS NUTRITION GROWTH  
HOLOTHUROIDEA ECOLOGY EVOLUTION SYSTEMATICS  
ECHINOIDEA  
TAXONOMY PALAEOBIOLOGY  
ECHINOIDEA HOLOTHUROIDEA NUTRITION ECOLOGY  
ASTEROIDEA SYSTEMATICS EVOLUTION  
ECHINOIDEA MARINE-POLLUTION BIOASSAY SPAWNING PERIODICITY  
CRINOIDEA TAXONOMY DISTRIBUTION ECOLOGY  
HOLOTHUROIDEA TAXONOMY REPRODUCTION BIOLOGY  
ASTEROIDEA DISTRIBUTIONAL-PATTERN ACTIVITY-RHYTHM LIFE-HISTORY  
SYSTEMATICS HOLOTHUROIDEA TAXONOMY NATURAL-HISTORY  
BIOCHEMISTRY MUSCLE ATPASE SARCOPLASMIC-RETICULUM MUSCLE-PHYSIOLOGY  
CALCIUM-REGULATION REGENERATION-INTERNAL-ORGANS  
CRINOIDEA DEVONIAN  
NUTRITION REPRODUCTION PHYSIOLOGY STRATEGIES  
SYSTEMATICS PALAEOBIOLOGY PALEOECOLOGY PALEOBIOGEOGRAPHY BIOSTRATIGRAPHY  
OPHIUROIDEA MORPHOLOGY BIOMECHANICS  
CRINOIDEA  
ECHINOIDEA PHYLOGENY POPULATION-GENETICS  
ASTEROIDEA REPRODUCTION  
OPHIUROIDEA HOLOTHUROIDEA TAXONOMY CULTIVATION  
OPHIUROIDEA TAXONOMY MORPHOLOGY BEHAVIOUR ECOLOGY  
HOLOTHUROIDEA  
BLASTOIDS MODERN-CRINOIDS  
ECHINOIDEA MIOCENE PARATETHYS-BASIN MEDITERRANEAN  
ASTEROIDEA SYSTEMATICS BRISINGIDA DEEP-SEA  
TAXONOMY BIOLOGY BIODIVERSITY  
POLAR-METABOLITES BIOLOGICAL-ACTIVITY ISOLATION STRUCTURAL-ELUCIDATION  
POPULATION-DYNAMICS BEHAVIOUR REPRODUCTION REGENERATION  
BIOLUMINESCENCE PHYSIOLOGY NEUROBIOLOGY FUNCTIONAL-ECOLOGY  
TAXONOMY EVOLUTION FUNCTIONALITY MESOZOIC-CRINOIDEA SACCOCOMA  
PALAEOECOLOGY TAXONOMY TAPHONOMY BIODIVERSITY-(+ EXTINCTIONS)  
ECHINOIDEA CRETACEOUS SYSTEMATICS BIOSTRATIGRAPHY PALAEOECOLOGY TAPHONOMY  
HOLOTHUROIDEA REPRODUCTION LARVAL-BIOLOGY  
ASTEROIDEA ECOLOGY TAXONOMY POPULATION-DYNAMICS  
HOLOTHUROIDEA TAXONOMY ZOOGEOGRAPHY  
TAXONOMY BIODIVERSITY ECOLOGY  
ECHINOIDEA LARVAE REPRODUCTION EMBRYOLOGY DEVELOPMENT  
ECHINOIDEA FISHERIES AQUACULTURE  
CHEMICAL-ECOLOGY REPRODUCTION NUTRITION ECOLOGY  
OPHIUROIDEA TAXONOMY BIODIVERSITY  
LIFE-HISTORY-TACTICS RECRUITMENT LARVAL-MOLECULAR-IDENTIFICATION  
ECHINOIDEA EVOLUTION MORPHOLOGY HOLASTEROID SPATANGOID JURASSIC CRETACEOUS EOCENE  
ASTEROIDEA HOLOTHUROIDEA OPHIUROIDEA ECHINOIDEA BEHAVIOR REPRODUCTION MORPHOLOGY  
LIVING-CRINOIDEA ECOLOGY BIOGEOGRAPHY SYSTEMATICS  
MESOZOIC-ECHINODERMS PALAEOBIOLOGY TAPHONOMY  
EARLY-PALEOZOIC-FORMS ORIGIN-&-EARLY-EVOLUTION  
ECHINOIDEA  
TAXONOMY PALEOECOLOGY MORPHOLOGY EVOLUTION ECHINOIDEA  
REPRODUCTION ECOLOGY AQUACULTURE FISHERIES GENETICS  
ASTEROIDEA REGENERATION FISHERIES  
ECHINOIDEA  
COMMUNITY-ECOLOGY INTRASPECIFIC-COMPETITION  
HOLOTHUROIDEA TAXONOMY SURVEY-METHODS MANAGEMENT AQUACULTURE-POTENTIAL  
ECOLOGICAL-ROLE LIFE-CYCLES EXPLOITATION  
LIFE-CYCLE-EVOLUTION  
ECHINOIDEA DEVELOPMENT EMBRYOLOGY  
CATCH-CONNECTIVE-TISSUE STALKED-CRINOIDS  
ECHINOIDEA CLYPEASTEROIDA SYSTEMATICS  
GROWTH REPRODUCTION

NAIDENKO, TAMARA  
 NAKAMURA, RAYMOND  
 NAKANO, EIZO  
 NEBELSICK, JAMES  
 NEILL, BRUCE  
 NEPOTE, ANA CLAUDIA  
 NESTLER, HELMUT  
 NEUMANN, CHRISTIAN  
 NICHOLS, DAVID  
 NICOSIA, UMBERTO  
 NISHIHARA, MORITAKA  
 NOJIMA, SATOSHI  
 O'CONNOR, BRENDAN  
 O'HARA, TIMOTHY  
 O'LOUGHLIN, P. MARK  
 OHTA, SUGURU  
 OJEDA, F. PATRICIO  
 OJI, TATSUO  
 OLSZEWSKA-NEJBERT, DANUTA  
 OLVER, JANE  
 PABIAN, ROGER  
 PAGETT, RICHARD  
 PALUMBI, STEVE  
 PARMA, SARA GRACIELA  
 PAULS, SHEILA MARQUES  
 PEARCE, CHRISTOPHER  
 PENCHASZADEH, PABLO  
 PETR, VACLAV  
 PHILIPPE, MICHEL  
 PIEPENBURG, DIETER  
 PIESSE, C.  
 PODOLSKY, ROBERT  
 PORTELL, ROGER  
 PRESTEDGE, GEOFFREY  
 PROKOP, RUDOLF JAN  
 PUTCHAKARN, SUMAITT  
 RAJAKUMAR, C.  
 REGIS, MARIE-BERTHE  
 REICH, MIKE  
 REMPALA, ERIN  
 ROBINSON, SHAWN  
 ROCCATAGLIATA, ALEJANDRO  
 RODRIGUEZ, SEBASTIAN  
 ROGERS-BENNETT, LAURA  
 ROSE, EDWARD  
 ROTMAN CLARK, HELEN  
 ROUX, MICHEL  
 ROWE, FRANK  
 ROY, MICHAEL  
 SABA, MASAKI  
 SAHADEVAN, ASHA PAYIKAT  
 SANO, MINORU  
 SASTRY, DWADASI  
 SCALLY, KEVIN  
 SCHELTÉMA, RUDOLF  
 SCHOPPE, SABINE  
 SCHUETZ, ALLEN  
 SEETO, JOHNSON  
 SERAFY, D. KEITH  
 SEWELL, MARY  
 SHEPHERD, SCORESBY  
 SHICK, MALCOLM  
 SHIRLEY, THOMAS  
 SHLEPR, MICHAEL  
 SIBUET, MYRIAM  
 SINGLETARY, ROBERT  
 SKOLD, MATTIAS  
 SLOAN, NORMAN  
 SMILEY, SCOTT  
 SMIRNOV, ALEXEI  
 SMIRNOV, IGOR  
 SMITH, ALBERT

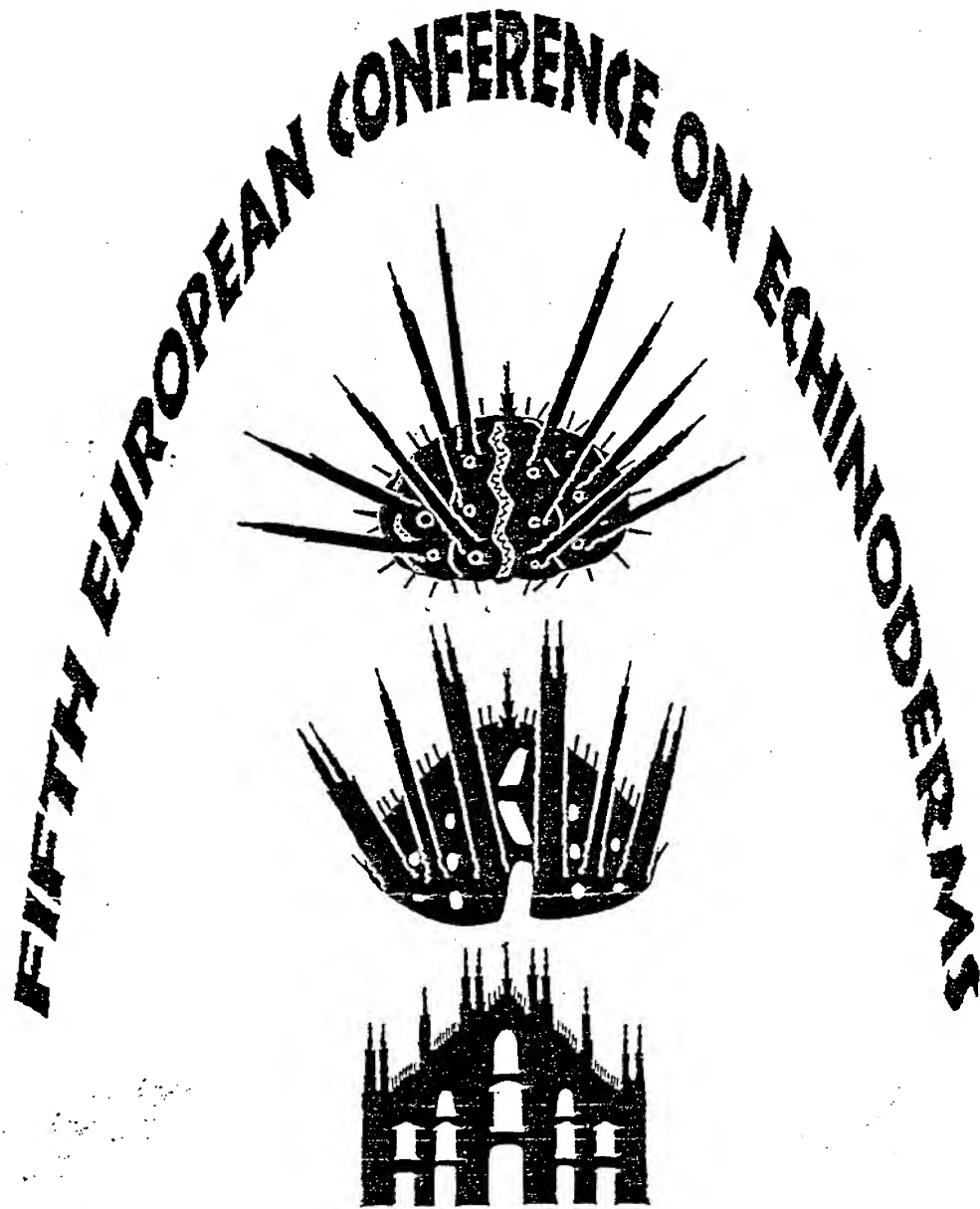
SMITH, ANDREW  
 SOLOVJEV, ANDREY  
 SONNENHOLZNER, JORGE  
 SPENCER, LARRY  
 SPONER, RENATE

ECHINOIDEA METAMORPHOSIS POLLUTION BIOASSAY CRYOPRESERVATION  
 ECHINOIDEA ECOLOGY EVOLUTION BIOMECHANICS EDUCATION  
 ECHINOIDEA EMBRYOGENESIS EXTRACELLULAR-MATRIX CELL-ADHESION  
 ECHINOIDEA ECOLOGY PALAEONTOLOGY TAPHONOMY BIODIVERSITY  
 BIOGEOGRAPHY ECHINOMETRIDS GENETICS SYSTEMATICS  
 BIODIVERSITY ECOLOGY EVOLUTION  
 ECHINOIDS  
 CRETACEOUS ECHINOIDEA SPATANGOIDA PALEOECOLOGY STRATIGRAPHY  
 FUNCTIONAL-MORPHOLOGY REPRODUCTIVE-STRATEGIES  
 TAXONOMY SYSTEMATICS JURASSIC TETHYS  
 ECOLOGY BIODIVERSITY POPULATION BEHAVIOR  
 LIFE-HISTORY-TACTICS PREDATION-PRESSURE ECOLOGICAL-ENERGETICS  
 OPHIUROIDEA TAXONOMY BIOTURBATION DENSITY-REGULATORY-FACTORS  
 TAXONOMY NATURAL-HISTORY BIOGEOGRAPHY CONSERVATION  
 HOLOTHUROIDEA  
 TAXONOMY DISTRIBUTION ZONATION  
 ECOLOGY BIOLOGY FEEDING-BIOLOGY DISTRIBUTION  
 CRINOIDEA TAXONOMY EVOLUTION BIOGEOGRAPHY REGENERATION  
 CRETACEOUS-IRREGULAR-ECHINOIDS PALEOBIOGEOGRAPHY STRATIGRAPHY  
 ECOLOGY ECHINOIDEA  
 CRINOIDEA-EPIBIONTS PARASITES PREDATORS COMMENSALS  
 BRACKISH-WATER-ECOLOGY CASPIAN SEA  
 ECHINOIDEA SPECIATION POPULATIONS-STRUCTURE MOLECULAR-EVOLUTION  
 PALEOBIOGEOGRAPHY ECHINOIDEA MESOZOIC-CENOZOIC  
 TAXONOMY ECOLOGY MORPHOLOGY  
 METAMORPHOSIS RECRUITMENT SETTLEMENT  
 ECHINOIDEA ASTEROIDEA  
 TAXONOMY PALEOBIOLOGY PALEOECOLOGY LOWER-PALEOZOIC  
 ECHINOIDEA PALEOECOLOGY STRATIGRAPHY TAXONOMY  
 DISTRIBUTION STANDING-STOCK POPULATION-DYNAMICS NUTRITION RESPIRATION  
 TAXONOMY  
 REPRODUCTION FERTILIZATION LARVAL-BIOLOGY PHYSIOLOGY BIOCHEMISTRY  
 CENOZOIC ECHINODERMS-S.E. USA-CARIBBEAN  
 PATIRIELLA-vivipara  
 PALAEOZOIC-ECHINODERMATA ECOSTRATIGRAPHY BIOLOGY  
 TAXONOMY ECOLOGY BIODIVERSITY  
 BIOLOGY ECOLOGY  
 BIOLOGY ECOLOGY POLLUTION ENVIRONMENT  
 TAXONOMY MORPHOLOGY FOSSIL-HOLOTHUROIDEA CAMBRIAN-RECENT  
 ASTEROIDEA ECHINOIDEA AQUACULTURE  
 CULTURE FISHERY ECOLOGY POPULATION-DYNAMICS  
 ASTEROIDEA OPHIUROIDEA PHYSIOLOGICALLY-ACTIVE-STERIODS  
 ECHINOIDEA ECOLOGY SPATIAL-DISTRIBUTION USE-OF-DRIFT-ALGAE  
 ECHINOIDEA GROWTH  
 FOSSIL ECHINOIDEA  
 ASTEROIDEA OPHIUROIDEA TAXONOMY ANATOMY  
 CRINOIDEA TAXONOMY ECOLOGY BIOGEOGRAPHY  
 ECHINODERMATA SYSTEMATICS ZOOGEOGRAPHY EVOLUTION  
 EVOLUTION GENETICS BIODIVERSITY BIOGEOGRAPHY  
 ASTEROIDEA TAXONOMY  
 NUTRITION GENETICS PHYSIOLOGY ECOLOGY  
 ECHINOIDEA POPULATION-ECOLOGY  
 TAXONOMY BIODIVERSITY ECOLOGY  
 MASTECATORY-FUNCTION ECOLOGY DENTAL-MORPHOLOGY EVOLUTION  
 LARVAL-DISPERSAL MODE-OF-REPRODUCTION  
 ASTEROIDEA ECHINOIDEA OPHIUROIDEA TAXONOMY REPRODUCTION BIODIVERSITY  
 JUVENILES  
 TAXONOMY REPRODUCTION  
 ECHINOIDEA TAXONOMY ECOLOGY  
 HOLOTHUROIDEA BIOGEOGRAPHY LARVAL-ECOLOGY LARVAL-DEVELOPMENT REPRODUCTION  
 ECHINOIDEA ECOLOGY  
 PHYSIOLOGY PHOTOBIOLOGY BIOCHEMISTRY DEVELOPMENT  
 CRAB-ASTEROID-INTERACTIONS  
 OPHIUROIDEA  
 TAXONOMY BIODIVERSITY  
 ECOLOGY TAXONOMY  
 OPHIUROIDEA REGENERATION DEVELOPMENT  
 HOLOTHUROIDEA FISHERIES  
 HOLOTHUROIDEA PHYSIOLOGY DEVELOPMENT EVOLUTION  
 TAXONOMY ZOOGEOGRAPHY EVOLUTION PHYLOGENY PALEONTOLOGY HOLOTHUROIDEA  
 POLAR-OCEANS OPHIUROIDEA DATABASES  
 PATHOLOGY/PATHOBIOLOGY HEMATOLOGY IMMUNE-SYSTEM  
 LINKS-TO-PROTOCHORDATES/VERTEBRATES  
 PALAEOBIOLOGY SYSTEMATICS  
 ECHINOIDEA EVOLUTION PALEOECOLOGY  
 ECHINOIDEA POPULATION-ECOLOGY BIOLOGY RECRUITMENT DISEASE-PREDATION-CLYPEASTEROIDA  
 POPULATION-ECOLOGY SYMBIOTIC-RELATIONSHIPS LIFE-HISTORY-STUDIES  
 EVOLUTION GENETICS BIODIVERSITY BIOGEOGRAPHY ASTEROIDEA OPHIUROIDEA TAXONOMY

STAMPANATO, SALVATORE  
 STANCYK, STEPHEN  
 STEWART, BRIAN  
 STICKLE JR., WILLIAM  
 STORC, RICHARD  
 STRATHMANN, RICHARD  
 STUMP, RICHARD  
 SUTER, SHERMAN  
 TABLADO, ALEJANDRO  
 TAHERA, QASEEM  
 TAKAHASHI, KEIICHI  
 TALBOT, TIFFANY  
 TAVARES, YARA A.  
 THANDAR, AHMED  
 THIERRY, JACQUES  
 THORNDYKE, MICHAEL  
 THORSEN, MARIANNE  
 TOMINAGA, HIDEYUKI  
 TOMMASI, LUIZ ROBERTO  
 TRONCOSO, JUAN  
 TURNER, RICHARD  
 TUTERA, PETER  
 UBAGHS, GEORGES  
 V.JUTERZENKA, KAREN  
 VADAS, ROBERT  
 VADET, ALAIN  
 VALENTINE, JOHN  
 VAN DER HAM, RAYMOND W.J.M.  
 VANDEN SPIEGEL, DIDIER  
 VEGA, JUAN TORRES  
 VIKTOROVSKAYA, GALINA  
 VILLIER, LOIC  
 VISTISEN, BODIL  
 von BRAND, ELISABETH  
 WASSON, KRISTINA  
 WATTS, STEPHEN  
 WEBSTER, GARY  
 WELSCH, ULRICH  
 WHITE, CHRIS  
 WILKIE, IAIN  
 WILLCOX, MARK  
 WORHEIDE, GERT  
 WRAY, GREGORY  
 YAMAGUCHI, MASASHI  
 YANAGISAWA, TOMIO  
 YOSHIZATO, KATSUTOSHI  
 ZAVODNIK, DUSAN  
 ZEIDLER, WOLFGANG  
 ZITT, JIRI

ASTEROIDEA  
 OPHIUROIDEA REGENERATION PREDATION POPULATION GROWTH  
 EURYALIDS OPHIUROIDEA BEHAVIOUR ANATOMY  
 ASTEROIDEA  
 OPHIUROIDEA ASTEROIDEA TAXONOMY CRETACEOUS  
 LARVAE EVOLUTION BODY-PLANS  
 ASTEROIDEA POPULATION-DYNAMICS ECOLOGICAL-MODELLING ENVIRONMENTAL-MONITORING  
 ECHINOIDEA PALEOBIOLOGY  
 ASTEROIDEA TAXONOMY SOUTH-ATLANTIC  
 FAUNA BIODIVERSITY BIOLOGY LARVAL-DISTRIBUTION POPULATION-DYNAMICS  
 MUSCLE-PHYSIOLOGY SPERM-MOTILITY CONNECTIVE-TISSUE  
 OPHIUROIDEA REPRODUCTION DEVELOPMENT BEHAVIOR FUNCTIONAL-MORPHOLOGY  
 ECHINOIDEA ECOLOGY REPRODUCTION POPULATION-DYNAMICS MORPHOMETRY  
 HOLOTHUROIDEA TAXONOMY SYSTEMATICS ZOOGEOGRAPHY BIODIVERSITY  
 BIODIVERSITY EVOLUTION MORPHOLOGY  
 DEVELOPMENT NERVOUS-SYSTEM PHYSIOLOGY  
 ECHINOIDEA GUT-MICROBIOTA  
 ECHINOIDEA IRREGULAR-SEA-URCHIN AGE-DETERMINATION POPULATION-ECOLOGY DEVELOPMENT  
 OPHIUROIDEA SYSTEMATICS ANTARCTICA  
 TAXONOMY ANTARCTIC  
 ECHINOIDEA OPHIUROIDEA SYSTEMATICS  
 TAXONOMY BIODIVERSITY CONSERVATION  
 PALEOBIOLOGY  
 OPHIUROIDEA ARCTIC-ECHINODERMS-ECOLOGY FEEDING-STRATEGIES POPULATION-DYNAMICS  
 GRAZING BEHAVIOR REPRODUCTIVE-ECOLOGY  
 ECHINOIDEA TAXONOMY EVOLUTION  
 OPHIUROIDEA ECHINOIDEA ECOLOGY  
 ECHINOIDEA CAMPANIAN-MAASTRICHTIAN-DANIAN NW-EUROPE TAXONOMY  
 DEFENSIVE-MECHANISMS MORPHOLOGY SYMBIOSIS  
 OPHIUROIDEA ECHINOIDEA SYSTEMATICS  
 REPRODUCTION INVERTEBRATES BIOTIC-ABIOTIC-CONDITIONS  
 ASTEROIDEA TAXONOMY EVOLUTION PALEOECOLOGY  
 OPHIUROIDEA  
 HOLOTHUROIDEA CYTOGENETICS POPULATION-GENETICS  
 ECHINOIDEA REPRODUCTION  
 GROWTH REPRODUCTION NUTRITION PHYSIOLOGY HORMONES  
 CRINOIDEA PALEOZOIC TAXONOMY PALEOBIOGEOGRAPHY  
 CRINOIDEA MORPHOLOGY NERVOUS-SYSTEM CONNECTIVE-TISSUE  
 CRINOIDEA LARVAL-BIOLOGY TAXONOMY SENSORY-BIOLOGY  
 OPHIUROIDEA ECHINOIDEA FUNCTIONAL-MORPHOLOGY  
 POPULATION-GENETICS MOLECULAR-PHYLOGENY EXPRESSED-GENES  
 ECHINOIDEA TAPHONOMY ECOLOGY ACTUOPALEONTOLOGY  
 EVOLUTION DEVELOPMENT MORPHOGENESIS  
 LARVAL-DEVELOPMENT BIOGEOGRAPHY  
 METAMORPHOSIS ECHINOIDEA DEVELOPMENT  
 COLLAGEN EXTRACELLULAR-MATRIX ELM  
 TAXONOMY BIODIVERSITY ECOLOGY DISTRIBUTION  
 TAXONOMY ASTEROIDEA  
 TAXONOMY TAPHONOMY PALEOECOLOGY





**MILANO, 7TH-12TH SEPTEMBER 1998**

**University of Milano, Department of Biology "Luigi Gorini"**

**FIRST CIRCULAR**

**PRE-REGISTRATION FORM**  
(To receive the Second Circular)

**5th European Conference on Echinoderms - Milano, 7th-12th September 1998**

**NAME:**.....

**ADDRESS:** .....

**Telephone:**.....**Fax:**.....

**e-mail:** .....

**For organizational reasons please answer the following questions (preliminary survey only):**

**- I plan to present a contribution in form of:**

**an oral contribution** ☐  
**a poster** ☐

**- related to the following topic:**

**Functional Biology** ☐  
**Physiology** ☐  
**Reproductive Biology** ☐  
**Developmental Biology** ☐  
**Paleontology** ☐  
**Ecology** ☐  
**Behaviour** ☐

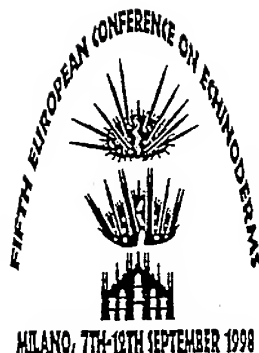
**- If possible, I would like to stay in a :**

**University Residence** ☐  
**Hotel** ☐



**TO:**

**Prof. M.Daniela Candia Carnevali**  
**Dipartimento di Biologia, Universita' di Milano**  
**Via Celoria 26,**  
**20133 MILANO - ITALY**



M.Daniela Candia Carnevali, Chair, 5<sup>th</sup> ECE  
Dipartimento di Biologia "Luigi Gorini"  
Università degli Studi di Milano  
Via Celoria, 26, 20133 MILANO, Italy

Tel. 39-2-26604465  
Fax. 39-2-26604462  
E-mail cndmdn@imiucca.csi.unimi.it

---

## 5TH EUROPEAN CONFERENCE ON ECHINODERMS

7th-12th SEPTEMBER 1998

MILANO, ITALY

University of Milano, Department of Biology "Luigi Gorini"

### ORGANIZING COMMITTEE

Chair: M.Daniela Candia Carnevali

Members: Francesco Andrietti  
Francesco Bonasoro  
Erminio Giavini  
Giulio Lanzavecchia  
Giulio Melone

### SCIENTIFIC COMMITTEE

M.Daniela Candia Carnevali (Università di Milano - Italy)  
Bruno David (Université de Bourgogne - France)  
Jean-Pierre Féral (Observatoire Océanologique de Banyuls - France)  
Michel Jangoux (Université Libre de Bruxelles - Belgium)  
Michael C. Thorndyke (Royal Holloway University of London - United Kingdom)  
Ulrich Welsch (Universität München - Germany)  
Iain C. Wilkie (Glasgow Caledonian University - United Kingdom)

**General information**

The 5th European Echinoderm Conference will be held in Milan from 7th to 12th September 1998 under the auspices of the University of Milan.

The meeting will cover all the main aspects of Echinoderm Biology and will be organized in seven scientific sessions: Functional Biology, Physiology, Reproductive Biology, Developmental Biology, Paleontology, Ecology and Behaviour. Each session will be introduced by a plenary lecture focused on relevant topical aspects of the matter. The scientific contributions will be presented in form of oral presentations and posters.

**Preliminary timetable:**

Arrival: Monday 7th September 1998

Start of scientific sessions: Tuesday 8th September

End of scientific sessions: Friday 11th September

Social trip: Saturday 12th September

Departure: Saturday 12th or Sunday 13th September

**Pre-registration**

In order to provide satisfactory arrangements for the meeting and convenient accommodation for everybody, it is important to know the number of possible participants. Those interested in participating in the conference should complete and return the enclosed pre-registration form **BEFORE NOVEMBER 1997**.

A **SECOND CIRCULAR** calling for papers and including registration and booking forms will be sent in the early Spring 1998 **ONLY** to those who have sent back the pre-registration form.

**Location and accommodation**

Place of the meeting will be the Department of Biology of the University of Milano, which is conveniently located near to the centre of the town.

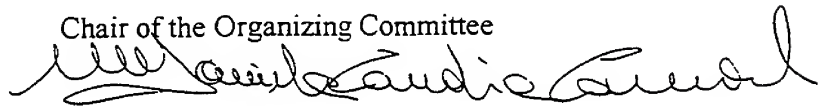
Milano itself is centrally located with respect to other attractive Italian towns and is easily accessible by air or train.

The accommodation will be arranged in convenient Hotels and in the University Residences.

We look with pleasure forward to welcoming you in Milano.

M. Daniela Candia Carnevali

Chair of the Organizing Committee







FISHERIES PROGRAMME  
INFORMATION SECTION

# BECHE-DE-MER

Number 8 — April 1996

## INFORMATION BULLETIN

Editor: Chantal Conand, Université de la Réunion, Laboratoire de biologie marine, 97715 Saint-Denis Cedex, La Réunion, France.  
Fax: (262) 938166; E-mail: conand@univ-reunion.fr — Printed with financial assistance from the Government of France

### NOTE FROM THE EDITOR

Welcome to the eighth issue of the *Beche-de-mer Information Bulletin*. This issue contains several contributions in various areas, which cover sea-cucumber biology and fishery, and are arranged as in previous issues in three major sections: new information, correspondence and publications.

Several articles from around the region have been extracted from working papers presented at the recent joint South Pacific Commission – Forum Fisheries Agency Workshop on the Management of South Pacific Inshore Fisheries, held in Noumea in June/July 1995.

The management of these fisheries raises problems in many Pacific countries and territories, as seen in Papua New Guinea (p. 2), Vanuatu (p. 11) and Indonesia (p. 17), as well as Galapagos (see *Beche-de-mer Information Bulletin* #7), where the situation is still very disquieting. These issues will certainly be discussed at a symposium on echinoderm fisheries and mariculture planned for the next International Echinoderm Conference (San Francisco, August 1996) (p. 50).

Following the article on the spawning of *Cucumaria frondosa*, other aspects of its reproductive biology are presented here (p. 22).

The rubrique 'Spawning observations' (p. 41) again contains helpful information, and the first reply to the request for 'fission and regeneration observations' (see *Beche-de-mer Information Bulletin* #7) provides new data for *Holothuria atra*.

Chantal Conand



### Inside this issue

Beche-de-mer fishing for sea-cucumber (beche-de-mer) by Papua New Guinea artisanal fishermen in the Tones Strait protected zone  
by P. Lokani Page 2

Management of beche-de-mer fisheries in the Western Province of Papua New Guinea  
by P. Lokani, P. Polon & R. Lari Page 7

Statistics on beche-de-mer exports  
by C. Conand Page 14

Beche-de-mer fishery in Baja California  
by G. Perez-Pascual Page 15

Commercial holothurians in South Sulawesi, Indonesia: Fisheries and mariculture  
by C. Conand & A. Tiwari Page 17

Studies on the reproductive biology of the Atlantic sea cucumber, *Cucumaria frondosa*  
by J. F. Hamel & C. Mercier Page 22

Spawning and asexual reproduction of tropical holothurians Page 41

Beche-de-mer Correspondence Page 44

Beche-de-mer Abstracts, Publications, Workshops and Meetings Page 47



S O U T H P A C I F I C C O M M I S S I O N

Reproduced from Oxford Today

## Richard Dawkins defends the tutorial system

8 (3): 4-5, with permission

**W**E in the biological faculty met recently to indulge in one of those satisfying orgies of communal breast-beating that afflict conscientious teachers from time to time. What are we doing wrong? How can we improve the way we teach and the way we examine? Certain other universities are said to do *x*, which is surely powerful evidence that *x* must be a good thing to do.

The present examination system unfairly discriminates against students with a short attention span. Shouldn't we be doing continuous assessment like they do at Chipping Ongar? Could we make lecture attendance compulsory like they do at Herne Bay? What do the undergraduates think? How about a clocking-in machine for practical classes? At Criche Down they have 'tutorials' of 20 strong, whereas we have a measly one student per tutorial, which can't be good for their education.

Why do the marks in the final examination cluster so monotonously about the middle of the second class, instead of distributing themselves satisfyingly from extreme to extreme? The external examiners have ordered us in future to do *y* (they do *y* at their own universities and it works well enough) but, unfortunately, our Decrees are such that we'd need an Act of Parliament to be allowed to do so. Here's a good idea: why don't we make our teaching very broad-based like they do at Budleigh Salterton? What an excellent suggestion, and at the same time let's make it very deep like they did at my old university.

This is all familiar enough – and laudable enough, for, despite my opening cynicism, there is certainly much that could be improved, and it is undoubtedly our duty to try. But one particular suggestion that has started to emerge makes my hackles rise: our teaching has been accused of being 'tutorial-driven'. The phrase originated with a pair of external examiners, who have been egged on to perceive their brief as widened from commenting on our examination system to telling us how to run our university.

It has been dutifully taken up by junior and senior members of Joint Consultative Committees, and is now echoing around departmental corridors. Our teaching is 'tutorial-driven' where it should be 'lecture-driven'. The meaning of tutorial-driven is best explained by reference to its remedy. The content of tutorial essays should be strictly limited to topics covered in official lectures. Tutors must be told the content of the lectures and must 'address' (to use the pretentious golfing jargon) these topics in their tutorials. Perhaps lecturers should distribute reading lists which all tutors must adopt and assign to their pupils.

I'll tell you what makes me particularly sad at this philistinism. I was an undergraduate myself once; we were tutorial-driven (we didn't realize it at the time) and it has been the making of my whole life. It wasn't just having one particular tutor that made all the difference; it was the whole experience of the Oxford tutorial system, and that *means* tutorial-driven. In my penultimate term Peter Brunet, my wise and humane college tutor, managed to secure for me tutorials in Animal Behaviour with the great Niko Tinbergen, later to win the Nobel Prize for his part in founding the science of ethology.

Tinbergen himself was solely responsible for all the lectures in Animal Behaviour, so he would have been well placed to give lecture-driven tutorials. I need hardly say that he did no such thing. Each week my tutorial assignment was to read one DPhil thesis. My essay was to be in the form of an examiner's report, combined with a proposal for follow-up research, a review of the history of the subject in which the thesis fell, and theoretical and philosophical discussion of the issues that the thesis raised. Never for one moment did it occur to either of us to wonder whether this assignment would be directly useful to me in answering some exam question. We might have thought that it could be useful to me in whatever career I was eventually to undertake.

The same is true of my more mainline essays on standard zoological topics. I have not the slightest memory of whether we had a lecture on the water-vascular system of starfish. Probably we did, but I am happy to say that the fact had no bearing upon my tutor's decision to assign an essay on the topic. The starfish water-vascular system is one of many highly specialized topics in zoology that I now recall for the same reason – that I wrote an essay on them.

Starfish don't have red blood, they have piped sea water instead. Sea water enters through a hole, and is constantly being circulated through an intricate system of tubes which form a ring around the centre of the star and lead off in branches down each of the five arms. The piped sea water embodies a unique hydraulic pressure system, operating the many hundreds of tiny tube-feet arrayed along the five arms. Each tube foot ends in a little gripping sucker, and they grope and swing back and forth in collusion to pull the starfish along in a particular direction. The tube-feet don't move in unison but are semi-autonomous and, if the circum-oral

nerve ring that gives them their order should chance to become severed, the tube-feet in different arms can pull in opposite directions and tear the starfish in half.

I remember the bare facts about starfish hydraulics, but it is not the fact that matters. What matters is the way which we were encouraged to find them. We didn't just mug up a textbook, we went into the library and looked up both old and new; we followed trails of original research papers until we had made ourselves as near to world authorities on the topic at hand as it is possible to become one week.

The encouragement provided by the weekly tutorial meant that one didn't just read about starfish hydraulics, or whatever the topic was. During that one week I remember that I slept, ate and dreamt starfish hydraulics. Tube-feet marched behind my eyelids, hydraulic pedicellariæ quested and sea water pulsed through my dozing brain. Writing my essay was a catharsis, and the tutorial was the justification for the entire week. And then the next week there would be a new topic and a new feast of images to be conjured up in the library. We were being educated, and our education was tutorial-driven.

It is true, of course, that I have just been indulging in a different kind of orgy: an orgy of nostalgia for my own university and its possibly unique method of education. I have no right to assume that the system under which I was educated is the best any more than my incoming colleagues have a right to make the reciprocal assumption about their own excellent universities. We have to make individual arguments for the educational merits of whatever systems we wish to advocate.

Richard Dawkins, Fellow of New College, Somerville Reader in the Public Understanding of Science.  
Dr Dawkins's latest book is *Climbing Mount Improbable*. This article first appeared in the *New College News*

— submitted by David Richo



# from Martha Stewart, Living. February 19

## TELEVISION

# program guide

Winter weather lends itself to this month's cozy indoor projects. Eberhard Mueller, executive chef of New York City's renowned Lutèce restaurant, shares some of his signature seafood dishes. Learn to make a tempered chocolate and a coeur à la crème on our special Valentine's Day show. Later in the month, florist Michael George shows us how to construct a Victorian rose bouquet, and because it's time to look forward to spring, we'll build a beehive, and master seedsman Shepherd Ogden will show us how to raise tomatoes from seed.—*Martha Stewart*

EPISODE 421 FEBRUARY 1-2

### Cooking: Seafood with Eberhard

#### BLACK SEA BASS WITH CHANTERELLE MUSHROOMS

SERVES 4 AS A FIRST COURSE,  
2 AS A MAIN COURSE

- 1 whole black sea bass, about 2 to 2½ pounds, cleaned and scaled
- 2 tablespoons unsalted butter
- ½ teaspoon coarse or kosher salt
- Freshly ground white pepper to taste
- 1 to 1¼ pounds fresh chanterelle mushrooms, cleaned
- ½ tablespoons canola oil, for cooking
- 1 shallot, finely chopped
- ½ pound mixed baby field greens, washed
- Sherry Vinaigrette, recipe follows
- 2 tablespoons chives, finely chopped
- Fresh chervil for garnish

1. Fillet the sea bass by making the first cut behind the gills to the backbone; starting at the tail end, cut toward the head along the backbone; remove fillet. Turn fish over; repeat. Trim the thin edges of the fillets for even cooking. Remove pin bones with pliers. Cut each fillet in half for first-course serving; leave whole for main-course serving.
2. Heat oven to 450°. Heat butter, salt, and pepper in a large sauté pan over medium heat. Add mushrooms; toss to coat. Cook until mushrooms release their liquid.
3. Heat an ovenproof sauté pan over medium-high heat. Season both sides of the fillets with salt and pepper. Add canola oil to pan. When oil is hot but not smoking, add fillets skin-side down; remove from heat if too hot. Sear until crisp, golden brown, 1½ to 2 minutes. Place the pan (with the fillets still flesh-side up) in the oven for 2 to 3 minutes.

4. Add shallots to mushrooms, and sauté. Toss greens with three-fourths quantity of Sherry Vinaigrette. Remove mushrooms from heat; add remaining vinaigrette and chives.
5. Drain fillets on paper towel. Distribute dressed greens on plates; top with mushrooms and fillets. Garnish each with chervil.

#### Sherry Vinaigrette

- 1 teaspoon Dijon mustard
  - ½ teaspoon coarse or kosher salt
  - Freshly ground white pepper to taste
  - 1 tablespoon sherry vinegar
  - 1 tablespoon red-wine vinegar
  - 1½ tablespoons walnut oil
  - 1½ tablespoons extra-virgin olive oil
- Whisk together mustard, salt, pepper, vinegars, and oils in a small bowl. Adjust seasonings, and set aside.

#### BAKED AND RAW SEA URCHINS

##### Baked Sea Urchin with Sea-Urchin Butter

SERVES 2

- 12 sea urchins, in shells
  - 1 cup (two sticks) unsalted butter
  - Freshly ground white pepper to taste
  - 2 tablespoons fish stock
  - 1 tablespoon heavy cream
  - Pinch of cayenne pepper
  - Coarse or kosher salt to taste
  - 1 teaspoon fresh lemon juice
  - Seaweed for presentation (optional)
  - Whole lemon, halved, for garnish
1. Heat oven to 450°. Cut away the flat bottom of the sea-urchin shell with scissors; pour away liquid. Scrape out membrane with the end of a spoon's handle. Set aside the six most attractive urchins in a baking dish.
  2. Scoop the flesh out of the remaining six, to yield about ½ cup. Pulse in food processor for 5 to 8 seconds. Add butter, and

blend until thoroughly emulsified; add more butter if necessary. Press the urchin-butter mixture through a sieve with a spatula.

3. Bake the whole sea urchins 4 to 5 minutes.
4. Meanwhile, combine stock, cream, cayenne, salt, and pepper in a small saucepan over medium heat. Add urchin-butter mixture, stirring constantly, until resulting emulsion thickens. Adjust seasoning; add lemon juice.
5. Remove sea urchins from oven. Arrange them on a bed of seaweed, drizzle with Sea-Urchin Butter, and garnish with lemon halves.

##### Raw Sea Urchin with Lemon

SERVES 2

- 6 to 8 sea urchins, in shells
  - Seaweed for presentation (optional)
  - Crushed ice
  - 1 whole lemon, halved
1. Insert scissors in hole located on domed top of sea urchin. Rotate around top of shell, cutting toward outer edge, exposing flesh.
  2. Place a bed of seaweed in a shallow bowl; top with crushed ice. Arrange sea urchins on top of ice; garnish with lemon, and serve.

#### PAN-SEARED SEA SCALLOPS WITH FRESH HERB SAUCE

SERVES 4 AS A FIRST COURSE,  
2 AS A MAIN COURSE

- 8 large sea scallops, about ½ pound
- 2 tablespoons unsalted butter
- 2 shallots, finely chopped
- ¼ cup Reisling, or other dry white wine
- 1 tablespoon white vinegar
- ½ cup fish stock
- 2 tablespoons extra-virgin olive oil
- Coarse or kosher salt to taste
- Freshly ground white pepper to taste
- 1 tablespoon vegetable oil for cooking
- 2 tablespoons fresh herbs, such as parsley, chives, and tarragon, finely chopped

communicated by Michael T. Laves

## STATE NEWS

### Two ice skaters die

KETCHIKAN — Two men from the Southeast village of Meyers Chuck died Thursday when they fell through the ice on an unnamed pond while skating. Alaska State Troopers Lt. Warren Tanner said Kenneth Olson, 65, and Garret Buffa, 56, apparently died Thursday afternoon. Troopers received a call from the village just before 6 p.m. reporting that Olson and Buffa were overdue from their skating trip. A search party from the village then went to the pond, Tanner said, and spotted one hole in the ice with a glove beside it. Divers from the Ketchikan Rescue Squad arrived Friday morning, found a second hole and retrieved the bodies, Tanner said. Alcohol is not suspected in the drownings, nor is foul play, he said. "These people apparently started skating on thick ice and then skated over to thin ice," Tanner said.

### Disabled ship reaches Adak

A disabled freighter that had been in danger of grounding in the Aleutian Islands safely reached port at the closed Navy base on Adak Saturday morning, the Coast Guard said. The 830-foot Baneasa's rudder became stuck Tuesday near Atka, and a Coast Guard cutter arrived to help Wednesday. The Liberian-flagged freighter is carrying no cargo but is loaded with 5,000 barrels of fuel. Coast Guard officials had feared the fuel could spill if the tanker ran aground. The tug Agnes Foss towed the ship into Scabbard Bay Saturday after a slow, one-day journey. Another tug, the Sea Venture, is expected to take the freighter to a shipyard for repairs. The Baneasa has a crew of 30, all Romanians.

### Pavlof eruption continues

Pavlof Volcano on the tip of the Alaska Peninsula continued erupting at a moderate level Saturday, spewing ash to 16,000 feet and sending out a lava flow. The Alaska Volcano Observatory said ground observers in Nelson's Lagoon, about 50 miles northeast of the 8,262-foot peak, reported seeing lava and fire fountaining from the volcano Friday night. Pavlof has been erupting intermittently since September, and late Thursday seismic monitors detected a powerful eruption under way. The volcano calmed down early Friday.

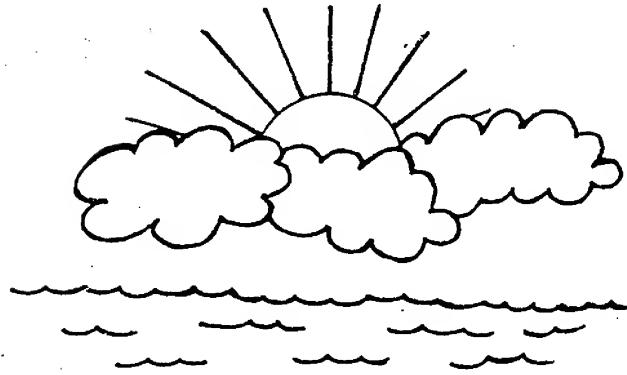
### Sea urchin fishery to open

JUNEAU — A new red sea urchin fishery whose regulation is to be funded in part by contributions from seafood processors is set to open Jan. 6 near Ketchikan and Prince of Wales Island. Processors have contributed \$103,000 to the Department of Fish and Game. "It's unique because the industry is actually anteing up money for the department to research and manage a fishery they want to have," said Paul Larson, deputy director of the commercial fisheries management division. The harvest rate has been set at 6 percent of the total population. Red sea urchins are harvested in 20 to 50 feet of water and can grow as large as a big grapefruit. The creatures are caught chiefly for their roe, which can fetch up to \$6.50 an ounce in Japan.

Daily News wire services

communicated  
by Michael Lares





## El Ofiuro y el Erizo (1)

Un ofiuro vanidoso  
quiso en un día nublado,  
hacerse el interesante  
con el vecino de al lado,  
que poco le conocía  
por ser un recién llegado.

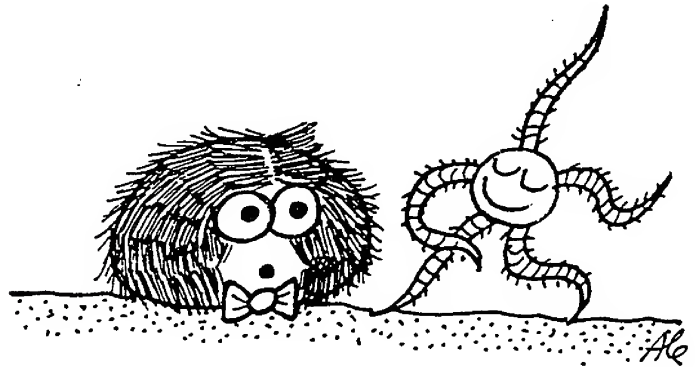
Era éste un Señor Erizo,  
muy blanco y muy educado,  
siempre servicial y atento  
con sus púas, bien peinado,  
quien se dirigió al ofiuro  
en amistoso intercambio.

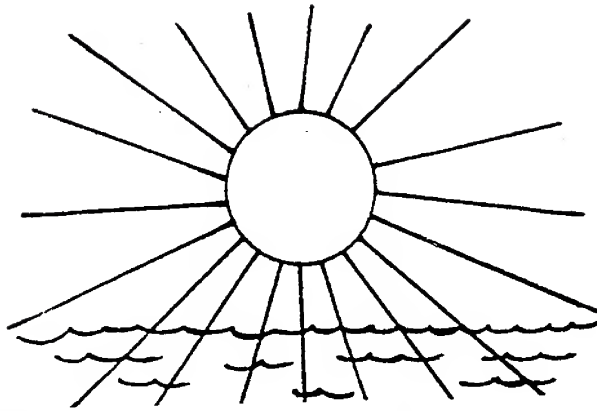
"¿Quién eres?" -le preguntó-  
"Soy el sol." -dijo la estrella-

"¿El sol metido en el agua?"  
"Sí señor, dando una vuelta"

"¿Y por qué no se calienta  
el agua que te rodea?"  
"Porque tengo ahora apagado  
el vapor de mis calderas."

"¡Qué raro! ¿Y porqué no brillas?  
Brilla el sol con luz intensa  
y es de todas las cosas  
calor y fuerza en la Tierra."  
"Por que no quiero brillar,  
puesto que si así lo hiciera,  
tan cegado quedarías  
que no verias mi belleza"...





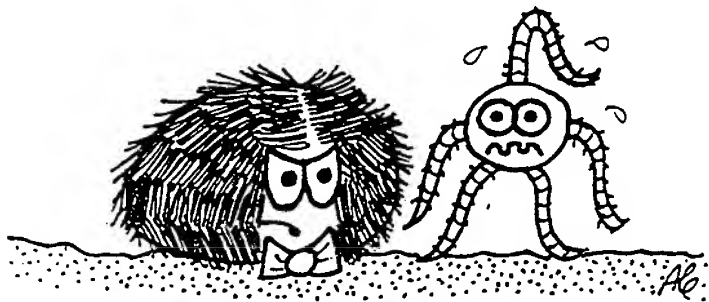
## El Ofiuro y el Erizo (2)

...más sucedió de repente  
que entre las nubes abiertas  
apareció majestuoso  
el brillante sol de veras.  
Algo tímido al principio,  
tenue iluminó la escena,  
pero más tarde esparció  
su claridad por doquiera  
dejando al ofiuroideo  
turbado ide qué manera!

Considerado el erizo  
queriendo aliviar su pena,  
le dijo: "Ya ves, amigo,  
que quien vive de apariencias  
expuesto siempre estará

a pasar una vergüenza.  
¿Por qué has de representar  
lo que tú no eres de veras,  
si todo tiene en el mundo,  
un lugar y una tarea?  
Si brilla el sol en el cielo  
iluminando la Tierra,  
tú, desde el fondo del mar  
cumples también tu faena,  
junto a otros organismos  
de nuestra Naturaleza."

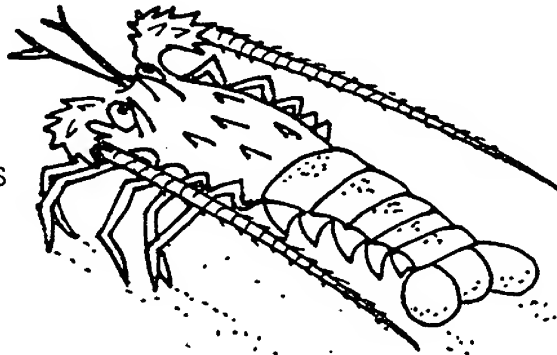
Ante una lección tan clara  
de filosofía y ciencia  
optó el pobre ofiuroideo  
por irse bajo su piedra.



# Adivinmar

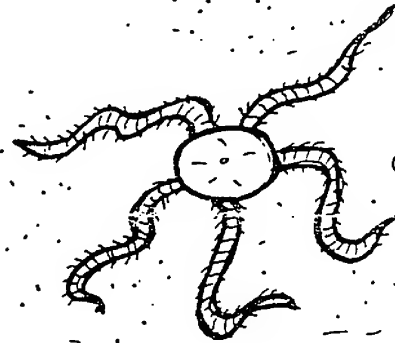
Un cuerpo espinoso  
(toda una coraza)  
con un par de antenas  
y diez largas patas.  
De noche pasea,  
de día en la casa,  
sus rejos inquietos  
vigilan la entrada.

(La Langosta)



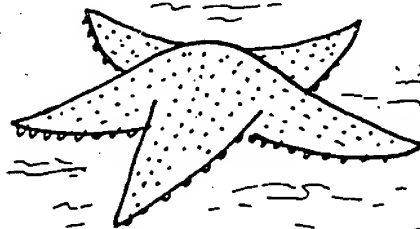
Cayó de lo alto del cielo  
un hijo que el sol tuviera  
un disco como su padre  
con rayos que serpenteen  
y llegó al fondo del mar  
y se convirtió en estrella

(Ofiuroideo, Ofiuro  
Estrella Frijol)



Con sus cinco puntas,  
- simetría perfecta -  
descansa en el fondo  
y mirarla, recuerda  
el triángulo hermoso  
de nuestra bandera.

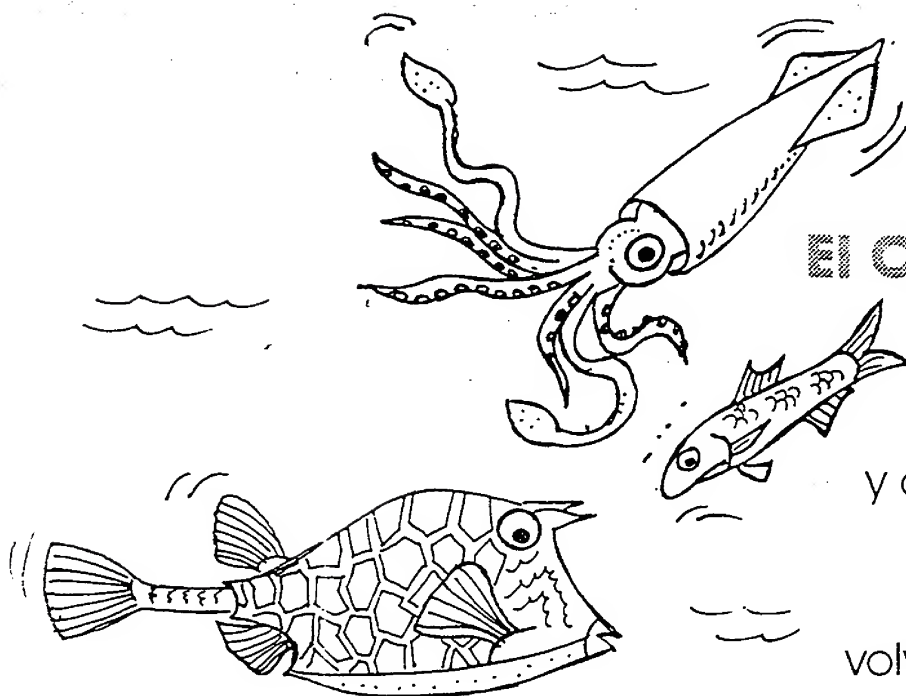
(La Estrella de Mar)



Vive un pequeño caballo  
sin corral y sin establo  
no galopa por los montes  
ni lograrás ensillarlo

(El Hipocampo  
Caballito de Mar)

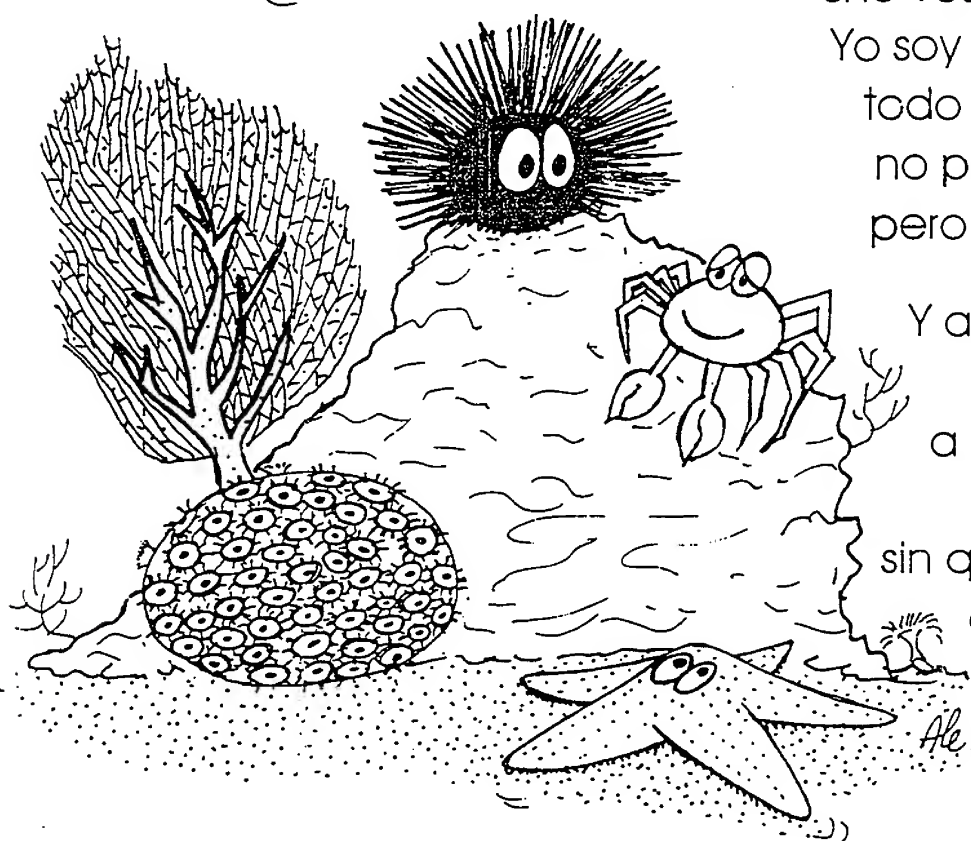




## El Cangrejito Perdido

Un poco más adelante se encontró con un erizo, y al ver que su cuerpo duro halla al suyo parecido, todo lleno de esperanzas volvió a preguntar lo mismo:

"Lo siento mucho, pequeño, ¿no ves que somos distintos? Yo soy muy negro, redondo, todo rodeado de pinchos; no puedo yo ser tu padre, pero puedo ser tu amigo."



Y así siguió preguntando al calamar, al torito, a la estrella, la manjúa, al coral y al abanico sin que pudiera encontrar al progenitor querido.



communicated by L.F. Baudouesque

European Union - DG XI Life Programme 1996-1998  
"Control of the Expansion of *Caulerpa taxifolia* in the Mediterranean"

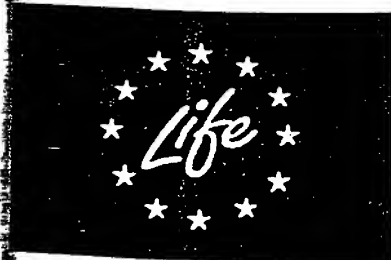
**EUROPEAN UNION - UNION EUROPÉENNE ( D G X I )**  
MINISTÈRE DE L'ENVIRONNEMENT - FRANCE  
MISSION INTERMINISTÉRIELLE DE LA MER - FRANCE  
CONSEIL RÉGIONAL PROVENCE - ALPES CÔTE D'AZUR  
CONSEIL RÉGIONAL LANGUEDOC-ROUSSILLON  
CONSEIL RÉGIONAL DE CORSE  
CONSEIL GÉNÉRAL DES BOUCHES-DU-RHÔNE - FRANCE  
CONSEIL GÉNÉRAL DES PYRÉNÉES-ORIENTALES - FRANCE  
MINISTERIO DE OBRAS PÚBLICAS Y TRANSPORTES - SPAIN  
MINISTERIO DE EDUCACIÓN Y DE CULTURA - SPAIN  
GOVERN BALEAR  
JUNTA DE ANDALUCÍA  
GENERALITAT VALENCIANA  
REGIÓN DE MURCIA  
GENERALITAT DE CATALUNYA  
PROVINCIA DE IMPERIA - ITALY  
REGIONE TOSCANA - ITALY  
MINISTERIO DELLE RISORSE AGRICOLI, ALIMENTARI E FORESTALI - ITALY



**SCIENTIFIC DOCUMENTS**  
**DEALING WITH THE ALGA**  
***CAULERPA TAXIFOLIA***  
**INTRODUCED TO THE MEDITERRANEAN**

*Travaux scientifiques consacrés à l'algue *Caulerpa taxifolia*  
introduite en Méditerranée*

Sixth edition  
*Sixième édition*



**GIS POSIDONIE**



This document is to be cited as :

**Ce document doit être cité sous la forme suivante :**

BOUDOURESQUE C.F., MEINESZ A., GRAVEZ V., 1996. Scientific documents dealing with the alga *Caulerpa taxifolia* introduced to the Mediterranean. Sixth edition. GIS Posidonie publishers, Marseilles, Fr. : 1-43.

To be asked to :

**Distribué par :**

GIS Posidonie, Campus Universitaire de Luminy, case 901, 163 Avenue de Luminy, 13288 Marseille cedex 9, France. Tél. : (33) 4 91 26 91 35. FAX : (33) 4 91 41 12 65.

*The 252 documents cited below can be classified as follows :*

- 2 Books,
- 32 Articles in international Journals,
- 15 Articles in other scientific Journals,
- 2 Chapters in multiauthor Books
- 117 Papers in symposium Proceedings,
- 10 Abstracts of scientific Symposiums,
- 4 Dissertations for the degree of Doctor (and similar diplomas),
- 24 Other Dissertations,
- 24 Scientific Reports,
- 22 Public Awareness.

## CONTENTS SOMMAIRE

Preface. <i>Preface</i> .....	3
A : Books. <i>Ouvrages</i> .....	3
B : International Journals. <i>Revue internationale</i> .....	4
C : Other Journals. <i>Autres revues</i> .....	6
D : Chapters in multiauthor books. <i>Chapitres dans ouvrages à auteurs multiples</i> .....	7
E : Papers in symposium proceedings. <i>Publications dans des Actes de colloques</i> ...	7
F : Abstracts of scientific symposiums. <i>Communication à des Colloques</i> .....	19
G : Dissertations for the degree of Doctor. <i>Thèses (et diplômes similaires)</i> .....	20
H : Other dissertations. <i>Mémoires de stages</i> .....	20
I : Scientific reports. <i>Rapports</i> .....	22
J : Public awareness. <i>Sensibilisation du public</i> .....	24
Author and Laboratory index .....	25
<i>Index thématique</i> .....	30
Subject index .....	36

Edited on October 19, 1996

*Document mis à jour le 19 Octobre 1996*